

American Aviation

25c

The News Magazine of Air Transportation

April 15, 1948

Stability or Collapse

THE STEADY red-ink parade of 1947 airline financial reports should give the new members of the Civil Aeronautics Board some conception of the magnitude of the Board's task in getting this nation's air transport industry back on its feet without delay.

The industry is critically ill. The estimated total net loss for domestic trunk-lines in 1947 of \$20,800,000 is a shattering blow to those who thought the airlines were finally stabilized during the war and could expand in a healthy and sound manner in the postwar period.

by
W. W. P.

The troubles are much more basic and fundamental than the added costs incurred by the grounding and modification of the DC-6's, or the sharply increased fuel and payroll costs, or the higher ground costs at airports. If the present difficulties were merely tied in with the general inflationary rise affecting the entire national economy, then the two substantial fare increases since the war would have absorbed a sizeable chunk of increased airline costs.

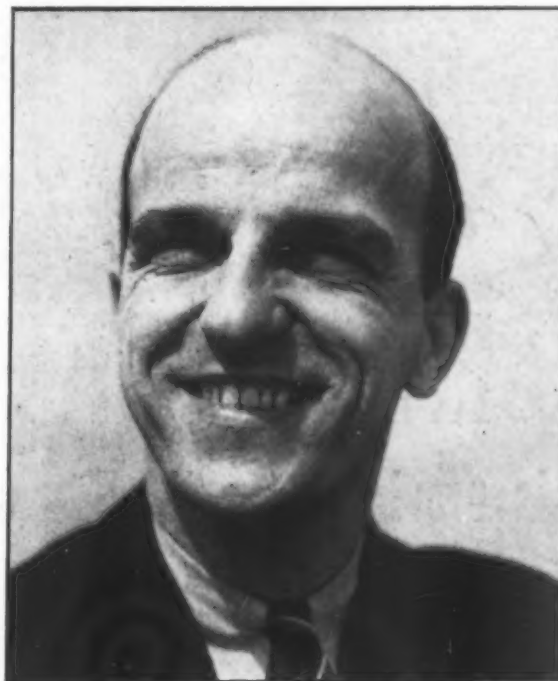
Nor can all of the other troubles be assigned to the government. Management has made its share of mistakes in estimating the postwar traffic requirements. New postwar equipment has fallen far short of delivery schedules and there are other factors both tangible and intangible which have contributed to the current financial plight of industry.

But the real root of the trouble, we feel, is more likely to be found in the lack of a national air transport policy by the Board itself. At no time has the Board given an indication that it knew where it was going or how it was going to get there. It has floated with the time, yielding to this pressure and to that, following rather than leading, creating reasons for its acts rather than using reasons for acting, and lagging far behind in its comprehension of the fundamental economics of air transportation.

Just how serious is the financial situation may be judged from the recent address given by Howard C. Westwood, one of the leading industry attorneys.

"In 1945, 90% of the total net investment in the domestic airline system was represented by common stock," Westwood said. "Preferred stock accounted for only 7%, and long term debt for only 3%. By the first six months of 1947 see how profoundly the

(Turn to page 8)



Heads ATA Engineering Conference

Joseph F. Martin, director of maintenance for American Airlines, has been elected new chairman of Air Transport Association's Engineering and Maintenance Conference. Martin has extensive operations experience as well as maintenance background. He began his aviation career in 1921 with Curtiss Aeroplane Co. and joined American in 1936. (See story on page 23)

In This Issue

21 Aviation Policy Bills
Ready for Congress 13

Overdue Mail Pay Boost
Offered Big Carriers 14

MANAGEMENT

SALES

OPERATIONS

Around the world and around the clock



BENDIX-SCINTILLA* ignition equipment

is proving its reliability on the air lanes of the world

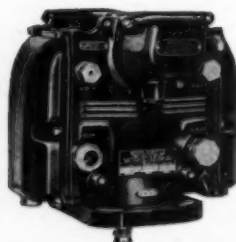
At the instant you read this, there are planes taking off, coming in for landings, and logging hour after hour of dependable flight—all with Bendix-Scintilla Ignition Equipment adding to their reliability. In temperature and weather extremes of all kinds, in

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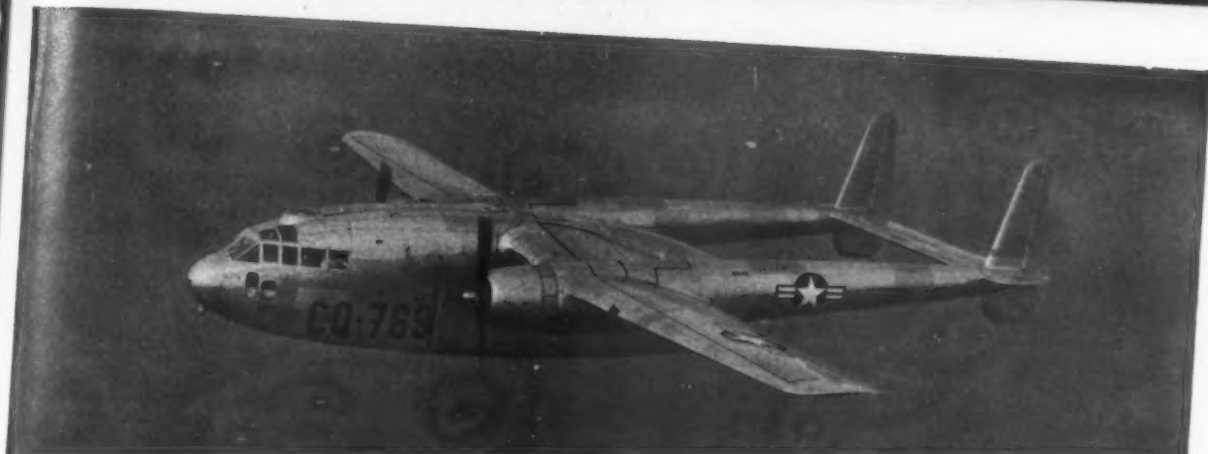
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BENDIX-SCINTILLA IGNITION EQUIPMENT



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Now! An Even Bigger, Better Flying Boxcar —The Fairchild Packet C-119

Something new in the air.

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the new Packet can transport 12 tons of men, equipment and supplies 1500 miles non-stop. As an ambulance plane it is equipped to carry 36 litter patients and attendants.

This new Flying Boxcar incorporates improvements and modifications proved in thousands of hours of actual service. All in all, it is flying evidence of an air-transportable Army . . . and of Fairchild engineering and research skill.

 **Fairchild Aircraft**

Division of Fairchild Engine and Airplane Corporation, Hagerstown, Maryland



FORTNIGHTLY REVIEW

A score of policy bills, charting the prospective course of U. S. aviation, are now ready for Congressional action. They embody basic recommendations of the Congressional Aviation Policy Board's report issued Mar. 1. (Page 13)

CAB on April 7 moved to grant long overdue mail pay relief to five major airlines. The proposal would increase mail income of United, American, TWA, Eastern, and Northwest by an estimated \$5.5 millions this year. (Page 14)

The problem of weight reduction versus greater reliability and service life for aircraft instruments was given major consideration at the 22nd annual ATA Engineering and Maintenance Conference in Kansas City. (Page 23)

The controversial question of whether the airlines are paying their fair and reasonable share of air terminal costs came in for sharp discussion at the first annual meeting of the Airport Operators Council in Boston early this month. (Page 35)

Rentzel Nominated as CAA Administrator

Delos W. Rentzel, president of Aeronautical Radio, Inc., and chairman of the Radio Technical Commission for Aeronautics, was nominated by President Truman on April 8 to become Administrator of Civil Aeronautics, succeeding T. P. Wright who left the post Mar. 1. Rentzel's appointment was regarded as a victory for those in government and private aviation who wanted a new deal in the CAA. The selection finally rested between Rentzel and Deputy Administrator Fred Lee, with Commerce Secretary Harriman's forces supporting Lee, industry and private sources backing Rentzel. Only 38, Rentzel was director of communications for American Airlines at the time he became ARINC president in 1943.

Plants Returned to Standby Basis

Four aircraft plants have been returned to a standby basis by the Air Force to assure readiness for early conversion to aircraft manufacturing in case of national emergency. Others may be placed in same category soon, unless the world situation shows definite improvement toward peace. Plants involved are Plancor No. 139, Wichita, Kan., where the Boeing B-29 was built during the last war; the Curtiss-Wright foundry Plancor No. 10 at Lockland, O.; Fisher Body aircraft assembly plant, Cleveland; and Douglas assembly No. 3, Tulsa, Okla. Private manufacturing in these plants will continue for time being, with AF taking over active supervision to make certain that plants are maintained in such a way to minimize delays if the facilities are needed for aircraft or parts production.

70-Group Air Force Demanded

The Republican controlled Congress moved toward strengthening U. S. air power on April 7 when the House Armed Services Committee asked President Truman to take prompt steps to increase Air Force combat strength from 55 to 70 groups. The unit, headed by Rep. Walter G. Andrews (R., N.Y.), estimated that in fiscal '49 beginning on July 1, it will cost \$5,442,000,000 to build the AF up to the 70-group figure. Since the Administration has already requested \$3,054,000,000 for a 55-group AF, the committee asked that an additional request for \$2,388,000,000 be submitted to Congress.

1948 Aircraft Funds to be Used Soon

Air Force sources last week stated that \$98,000,000 of the \$117,000,000 carried in the 1948 fiscal appropriations

(Turn to page 6)

AMERICAN AVIATION

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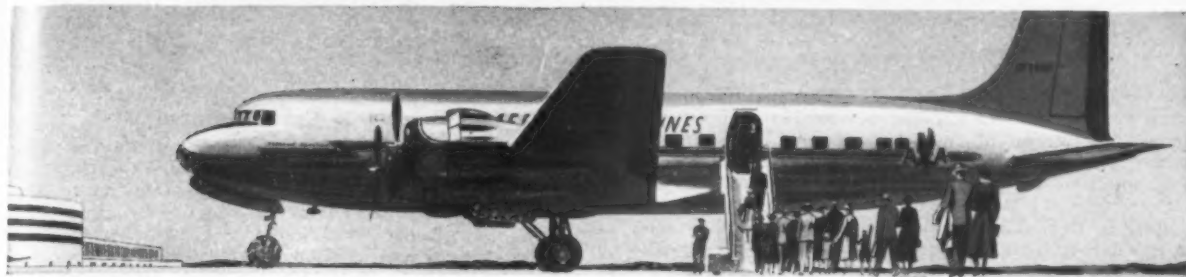
American Aviation Directory: Published twice a year, spring and fall. Single copy \$5.00. Dallas E. Long, managing editor.

American Aviation Air Traffic Guide: Monthly publication of airline schedules, rates and regulations. Subscriptions: U. S. and Latin America \$7.50 one year; Canada \$8.00. All other countries \$9.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2154. H. D. Whitney, managing editor.

INDEX

Airline Commentary	21	Management	13
Air Terminals	35	Obituary	50
Background & Trends ..	11	Operations and Maintenance	23
Books	50	Passenger Service	48
Calendar	18	Personnel	20
Cargo	38	Safety Slants	32
Editorial	1	Thirty-Hour Check	30
Fortnightly Review	4	Traffic and Sales	42
Index to Advertisers ..	49	Wings of Yesterday	50
Letters	50		

The NEW DC-6 Flagship is winning new thousands to air travel!



To provide more people and more places with the finest air transportation, American Airlines is placing in nation-wide service its large fleet of DC-6 Flagships, the most modern four-engine airliners in operation. These new, luxurious Flagships are the newest contribution to American's record of progressive leadership.



American has spared no effort in making these five-mile-a-minute Flagships the most comfortable, dependable and efficient four-engine aircraft in service. Our own large staff of experts has supplemented the "know-how" of the Douglas company's engineers and craftsmen by adding exclusive American features.



New converts to air travel are being won by the smooth riding, comfort, convenience and effortless speed of DC-6 Flagships. It is axiomatic that since no single air line serves all destinations, every satisfied customer on a given air line almost certainly becomes a customer of other lines as well.



AMERICAN AIRLINES

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FORTNIGHTLY REVIEW

(CONTINUED FROM PAGE 4)

for aircraft procurement for the Troop Carrier Command and Air Transport Command have been awarded in contracts to date. The balance of \$19,000,000 will be contracted for by end of the fiscal period, June 30. Contracts cover the C-82 and C-119 Packets, the C-97 Stratofreighter, the C-121-A new Constellation, and the C-125 Pioneer trimotor transport. With engines and other equipment such as radio, electronic devices, etc., greatly increased in prices, it has been discovered that the airframe itself, under current contracts, is costing only 55% of the completed plane.

OIT Aircraft Export Licenses End April 15

Licenses for export of U. S. aircraft and aircraft components were being issued by the Aircraft Division, Office of International Trade, until April 15, but only on basis of close liaison with the State Department's Munitions Control Board. Shipments involved concern only so-called friendly countries. President Truman on Mar. 28 placed control of exports of all aircraft and parts under the Munitions Control Board, effective April 15. State Department was preparing to announce regulations which will govern future shipments of so-called implements of war to foreign countries.

Names in the News:

Gen. Hoyt S. Vandenberg, vice chief of staff of the Air Force, on April 1 was nominated by President Truman to be chief of staff, succeeding Gen. Carl Spaatz, who resigned. Spaatz asked to be relieved from active duty effective July 1, with permission to take advantage of accrued leave as of May 15 . . . **Henry Bendel Gibbons**, chief of structures for Chance Vought Aircraft Division of United Aircraft Corp., receives the 1947 SAE Wright Brothers Award on April 15, at dinner of National Aeronautic and Air Transport meeting of Society of Automotive Engineers. His technical paper, "Experiences of an Aircraft Manufacturer with Sandwich Material," which won him the honor, was based upon his development of this novel type of wing construction . . . **Capt. Eddie Rickenbacker**, president of Eastern Air Lines, on Mar. 30 was awarded the American Legion National Certificate of Appreciation for his company's efforts in vocational rehabilitation program of war veterans.

Notes in the News:

The proposed increase in national defense budget would step up plane production from less than 1,000 a year to 1,500-1,600, according to W. Stuart Symington, secretary of the Air Force. However, the dollar increase would not result in more plane deliveries before 1950, he said . . . Sponsors of the second annual **International Travel & Vacation Show**, to be held in New York at Grand Central Palace, May 3-8, report that nine international airlines already are preparing exhibits. Airline interest in international tourist traffic is high, and other lines are expected to enter the show . . . Indications are that Howard Hughes probably will not resume testing the **big H-4 flying boat** until June. Originally he planned to put the huge craft back into the water this month, but he has since decided to install a supplementary control system to back up the hydraulic control system devised for the craft . . . The **1,000th trans-Atlantic crossing** by British Overseas Airways' Constellations was made early this month. BOAC Connies have carried 23,000 passengers and flown 4,194,000 plane miles . . . **Pioneer Air Lines**, the first certificated feederline, late in March flew its 100,000th passenger and completed 26,000,000 passenger miles.

International

ICAO Considers New Crew Member

Desirability of establishing a grade of "non-piloting aircraft commander" is being studied by the International Civil Aviation Organization's personnel licensing division which opened a three-week meeting in Montreal late last month. The division hopes to make further progress in standardizing qualifications for pilots, flight crews, and ground personnel. An ICAO statement explained that "experience has shown that many airline captains at the comparatively early age of 45 either cease their active employment in aviation or accept appointments outside aviation. This loss of valuable piloting experience might be reduced if airline transport pilots could be permitted to continue in command of aircraft, keeping their judgment and experience available for command decisions, in spite of being no longer physically qualified in all respects for the actual operation of the aircraft controls."

International Travel Card Recommended

An international travel card and a standardized internationally-accepted cargo document have been recommended by the International Air Transport Association's government forms subcommittee meeting in London. The proposals will be submitted to the next meeting of ICAO's facilitation division which convenes in Geneva on May 17. The travel card would replace passport, visa, and other documents required by some countries for all non-immigrant travelers.

Tudor IV to be Tested as Freighter

The Avro Tudor IV transports, which have been grounded since loss of the British South American Airways plane several weeks ago between the Azores and Bermuda, will be allowed to fly as freighters, pending further tests. They will not, however, be allowed to fly Azores-Bermuda. Tests now underway will determine when the planes will be reinstated as passenger carriers. Meanwhile, the Tudor I has returned from testing station at Khartoum, Egypt, and if the modified plane is granted an airworthiness certificate, it will be used by British Overseas Airways on Empire routes.

Transocean's Canadian Rights Cancelled

C. D. Howe, minister of Reconstruction and Supply for the Canadian government, announced that landing rights of Transocean Airlines, of Oakland, Calif., were cancelled April 1. Transocean has held a sub-contract from Trans-Canada Air Lines to transport up to 7,000 English emigrants from England to Ontario, and was understood to have carried considerably more than half this number to Canada when the ban went into effect. Howe claimed the cessation of operations was necessary because of the dollar situation, but a strong fight both here and in Canada was predicted in effort to reinstate the carrier's operations.

ANA to Press for International Routes

Australian National Airways, privately-owned airline which has been refused international routes by the Australian government, plans to base its overseas service in countries outside Australia where permission to operate can be obtained, according to reports from Australia. Capt. Ivan Holyman, ANA managing director, has charged the government with seeking to protect its Qantas Empire Airways route to England and its BCPA route to the U. S. and Canada.



The Birdmen's Perch

By *Major Al Williams, ALIAS, "TATTERED WING TIPS,"*

Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.



Arizona is the type place we like!

Know what they're doing in Arizona?

A newspaper and an association of flyers down there have set to work air-marking every community of more than 100 population!

And in the first six months of their campaign they completed 103 of the air-markers . . . figure on having the whole job (150 markers) done about the time you read this!

We like people like that who get up and git instead of sitting around discussing the situation. Any situation.

We flap our tattered wing tips in admiration for the Arizona boys!

They gave us a great idea, too. It's in the next paragraph.

ON YOUR MARK

Our great idea is about marking, also.

You can see a lot of Gulf Discs at airports around the country, which say "Here's the place to get Gulf Aviation Products" . . . such as Gulfpride Oil.

And while these discs remind you to use Gulfpride Oil, they don't remind you *why* you should use it!

They don't remind you of the Alchlor Process, that extra refining step that gets extra carbon-and-sludge-formers out of Gulfpride *after it's already been refined!* They don't remind you how much more and better lubrication you get quart-for-quart from Gulfpride.



Our idea is to write these facts in huge letters beneath the Orange Discs.

But we can't think of any place where there's enough room for them.

Until we figure this knotty problem out, you'll have to continue to remind *yourself* of Gulfpride's tougher, longer-lasting lubricating film.

Which you can do by using it!

BLANK DEPT.



This is the Blank Dept. this month, because we still haven't figured what you Perch Pilots want here.

We'll admit your letters did finally start rolling in. A lot of you want to continue the Little Known Facts Dept. Some of you want a Pet Pilot Peeve or Favorite Flying Gripe Dept.

And one diplomat even suggested alternating Little Known Facts with Favorite Flying Gripes!

We'll try to let you know next month, because by next month we figure we'll have enough mail to show clearly what you like to read.

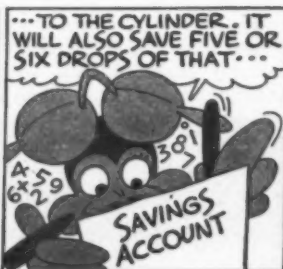
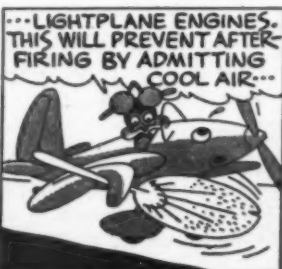
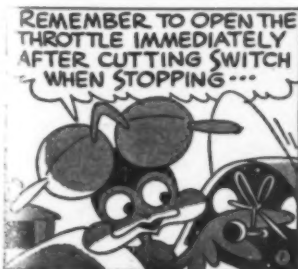
If we have, we'll announce the name of this department.

Send your idea to the address up above, there.

Gulf Oil Corporation and Gulf Refining Company...makers of



GULF AVIATION PRODUCTS



EDITORIAL

(CONTINUED FROM PAGE 1)

picture has changed. Common stock had fallen to considerably less than half of the total investment, or 41%, preferred stock had risen to 17%, and long term debt had soared to a share actually greater than the total common stock interest, or 42%.

"This is a shocking change. It means that the capital structure of this industry no longer has the give, or absorbing power, of equity financing. Generations of railroad history testify most eloquently to the dangers of this condition."

Examination of the financial plight of the airlines and of the network of trunk and feeder routes authorized by the Board reveal how wide of the mark the Board has come in carrying out the mandate of Congress to proceed with the orderly and sound development of an air transport industry. Such examination also reveals a complete lack of understanding of the economics of the airplane and how low-cost air transportation is to be achieved for the public.

Because of this lack of understanding of fundamentals in airplane economics, the airlines find themselves in a precarious position today. Not only have they priced themselves out of the volume market which has been the goal of air transport from its inception, but the dilution of traffic in many areas of the country prevent the lowering of costs because of lack of volume potential.

There was a time a few years ago when the airlines were edging into the volume travel market, but today the fare differential makes it clear that the airlines must appeal again largely to upper-bracket incomes as they did in the early stages of development. At five and a half cents a mile, the airplane is a half cent over rail parlor fare, while rail coach fares remain at 2.8 cents a mile and bus fares at 1.8 cents.

Yet it is going to be extremely difficult, if not impossible, to realign air fares downward in a more competitive position with ground transport unless the individual airlines can produce volume traffic. And the CAB has so diluted the traffic potential of many carriers by duplicating services, and has burdened so many carriers with profit-less small-town stops for which the carriers did not ask, that efficient, volume operations seem far away indeed.

We would be the last to say that the airline network should be frozen permanently or that there is no need for many more stops, route extensions and even a few trunk lines. Nor would we lay the sole blame on the CAB for the expansionitis which brought about wholesale route allocations within the past few years. But we do say that the CAB has been both unrealistic and lacking in knowledge of airplane economics in the majority of its route awards, and that such awards were made too often as the result of pressures rather than as a result of sensible planning.

One particular CAB member has been hog-wild over expansion, especially of feeders, to the extent that the government is now committed to a great

many thousands of miles of high-cost feeder service without ever having studied carefully a few feeder experiments before embarking on a national allocation. This large-scale feeder commitment may yet prove to be a major blunder bringing down upon the heads of CAB and industry a complete re-examination of air policy by the Congress.

One of the most unforgivable actions of the Board has been the dispensing of thousands of miles of feeder routes paralleling existing airlines, with commitments to pay the feeders sixty cents a mile and more and continuing to pay existing parallel airlines three, four and five cents a mile. The Board was created in 1938 to stabilize the industry economically, but actions in recent years have tended to destroy security, stability and ability to operate efficiently, by needless dilution of traffic along parallel routes.

The Board, too, has made a farce of its own requirements for certificates of convenience and necessity. "Fit, willing and able" became just four whimsical and meaningless words in the lavish dispensing of some feeder routes.

The Board should re-read the Civil Aeronautics Act of 1938, then ponder the 1947 financial reports, and make a business-like re-appraisal of the industry and the airline network. At no previous time has the air transport industry been worse off fundamentally. The goal of low-cost air transport for the public, and economic stability for the industry, seems far away. The Board had better get down to realism without delay or collapse is inevitable.

WAYNE W. PARRISH.

"In the 29 years of air mail service, the net cost to the Post Office Department has been only \$45,000,000. For this amount, less than the cost of one modern battleship, the world's greatest air transport system has been developed and sustained."—Robert Ramspeck, v.p., Air Transport Association.

"What we have to aim for is that a Venezuelan pilot flying an American plane making a bad weather approach to a Chinese airport where a Czech controller is operating a British landing aid device should feel as happy in the cockpit as a baby in the cradle."—Sir William Hildred, Director-General, International Air Transport Association.

"It is not the desire actually to go fast that impels attention to the fastest mode of transportation—it is the desire of all people to save time."—John W. Thompson, vice president, Air Transport Association.

AMERICAN AVIATION

CREATIVE ENGINEERING



SNOWFLAKES IN DEATH VALLEY



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In eight years, AiResearch has acquired the world's finest laboratories and the greatest reservoir of experience in designing and building equipment for air pressure and temperature control at high altitudes.

In meeting the space, weight and performance standards of aircraft, this work has called for unusual creative talent and imagination. Today this wealth of engineering ability and "know how" is available to you—in whatever field your interests may be.

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SIKORSKY AIRCRAFT

Bridgeport, Connecticut

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BACKGROUND & TRENDS

Aviation Policy: Of the 21 aviation policy bills introduced in the Senate and House last week to implement recommendations of the Congressional Aviation Policy Board, only those of non-controversial nature will get legislative action this session. There is no chance for those bills requiring lengthy hearings, in view of contemplated adjournment in June. Many will receive consideration at hands of friendly committees almost immediately.

Another Vacancy? While the Civil Aeronautics Board is at full five-man strength for first time in more than six months, the Board membership is far from settled. Harlee Branch retires on May 1, and there may be an additional vacancy before too long. If Oswald Ryan is offered a Federal judgeship, which is a good possibility, he'll accept it quickly. Like Branch, Ryan has been on CAB since the start.

Report to Forrestal: The Air Coordinating Committee, Joint Chiefs of Staff, and Research and Development Board last week were planning early submission of a plan to Defense Secretary Forrestal for implementing the SC-31 report on air traffic control. It was understood that the three groups had agreed that an appropriation of about \$75,400,000 will be required to carry out the initial research and development work needed to get the 15-year program going.

Rate Decision Soon: CAB decision in the important Air Freight Rate Case may be expected soon, because of fact that several suspended tariffs involved in the investigation will become effective automatically on April 22 if the Board doesn't prescribe new rates before that date. The case entered final stage last week with ending of oral argument.

Cost of Enterprise: High losses which aircraft manufacturers may experience in developing new commercial transport models are revealed in 1947 annual report of the Glenn L. Martin Co. Under "loss on abandonments" company listed \$15,353,316 for the 3-0-3 project, \$1,270,367 for special type 2-0-2 projects, \$1,291,809 for 2-0-2 airplane parts scrapped due to design changes, and \$9,950 for a special type 3-0-4 project.

Record Revenues: Some indication of record passenger revenues received by most of the airlines during the first quarter is found in Eastern Air Lines' report that its passenger income during that period amounted to approximately \$16,500,000—an increase of 46% over same period of '47 and an all-time high for the company. The figure reflected two increases in passenger fares since first quarter last year, plus a 20% increase in revenue passenger miles flown. EAL's \$6.3 millions from passengers in March was about one million greater than best previous monthly record and \$1.8 million higher than March, 1947.

New Protest: Air Transport Association plans to file new protest with CAA over new Federal-aid airport regulations which permit public airport operators to let exclusive contracts for sale of gasoline and oil. New regulation is to become effective May 1.

Sales Prospects: Pan American Airways and KLM are reported to be prospects for purchase of additional Convair-Liners. Consolidated Vultee is hot after selling United Air Lines on the Convair, since UAL's order for twin-engined transports presumably would be for about 55 planes.

Weather Ships: All but two of the Navy-supervised ocean weather ships in the Pacific have been discontinued. Two were withdrawn some time ago, three more early this month. Reason: insufficient personnel. Pan American Airways has protested the withdrawal. Meanwhile, in Washington, Senate and House Committee action is well along on companion bills (S-2122 and HR-3132) to give Coast Guard statutory authority, now lacking, to establish and operate ocean stations in all waters. Funds are understood to be earmarked.

Assist from UAL: A search radar breakdown on a weather ship stationed between San Francisco and Honolulu was repaired on the spot recently after a United Air Lines plane on scheduled flight dropped necessary replacement parts. Without UAL's cooperation, the ship would have been without radar for 20 days.

Unusual Financing: Lockheed's recent contract with TWA for 12 additional L-749 Constellations contains several unusual features. Because TWA was not in position to purchase on a cash basis, Lockheed reports it was necessary to find a method by which the airline could pay over a protracted period with adequate protection for the manufacturer. With the participation of Curtiss-Wright in financing the spare engines and spare propellers, agreements were made with commercial banks to advance money on notes executed by TWA. These notes, payable in monthly installments, are secured by a chattel mortgage on the planes and parts, and are guaranteed by Lockheed. Monthly payments will be applied by Lockheed to the discharge of obligations under its revolving credit during 1948. This arrangement is believed to be first of its kind.

Tulsa Plant Preferred: Several manufacturers are angling for the Douglas assembly plant No. 3 at Tulsa, Okla., which has been returned to a standby basis for early conversion in event of national emergency. A portion of the plant is now occupied by American Airlines' maintenance base. The Tulsa facility was one of the better war-built plants, but even more important the labor situation was excellent. Local labor was good, and throughout the Douglas wartime operation the plant was virtually free of labor squabbles.

Still Rising Fast: Air cargo continues to be fastest growing element in airline traffic. With estimates for last 10 days of March, Delta Air Lines reports that freight shipments in first quarter this year were up 180% over same period of '47. Increased use of air freight by large industrial firms was big factor in United Air Lines' 81% increase in February over year ago. Internationally, Pan American Airways' cargo shipments in March were up more than 50% over last year, and up 15% over previous month.

Nature of Freight: Auto parts and accessories (12.2% of total freight ton miles) represented the single largest category of commodities shipped via air freight on certificated domestic airlines in a recent one-week study period. Apparel, textiles and dry goods which placed a close second among the certificated lines with 11.8%, was a strong first with non-certificated freight carriers, representing 48.5% of their total. Agricultural and horticultural products category was second highest among non-certificated carriers with 16.5%.

Squier Whirling: Carl Squier, v.p.-sales of Lockheed Aircraft Corp., is taking lessons in a Bell helicopter at Paul Mantz's base at Los Angeles. He just up and decided he wanted to learn to fly one of those things.

Research keeps
B.F. Goodrich
FIRST IN RUBBER



Why globe trotters wear rubber boots

THE FIRST plane to fly 'round-the-world on scheduled airline service was the "Clipper America", shown above. On that pioneer trip, this plane wore B. F. Goodrich De-Icer boots to protect it against icing conditions.

Today, all globe-trotting scheduled airliners are equipped with De-Icers for safer, more dependable flights.

De-Icers fit snugly on the leading edges of wings and empennage, where most ice forms. Inside the De-Icer, a series of air-driven tubes inflates and deflates, flexing the rubber. This cracks and frees any ice that has formed on the leading edges, and

the air stream carries it away.

This simple system has proved so safe and efficient that today practically every airliner requiring ice protection is equipped with B. F. Goodrich De-Icers. Many twin-engine private planes also use De-Icers to cut delays, increase availability and provide added safety.

De-Icers are light weight and take up little space for their plumbing. They are operated safely—by cool air under low pressure. They are easily maintained and low in cost. Tailor-made De-Icers can be quickly installed on planes that have built-in plumbing. And complete De-Icer systems,

including the latest improvements, can be designed for new models.

In the 20 years since B. F. Goodrich engineers first developed the De-Icer they have made it steadily better. Constant research, plus the experience gained in turning out over 100,000 sets of De-Icers, make today's De-Icers the safest ice-removal device for airplane leading edges yet developed. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F. Goodrich
FIRST IN RUBBER

Score of Aviation Policy Bills Ready for Congress

By GERARD B. DOBEN

The prospective course of U. S. aviation has been charted in a score of policy bills which were introduced in House and Senate last week.

Embodying the basic recommendations of the Congressional Aviation Policy Board's report to Congress March 1, these 21 bills are now in the hands of friendly committees and friendly committee chairmen. A considerable number of them may be passed before the contemplated adjournment of Congress next June. Added incentive to get these bills on the statute books stems from the increasing tempo of demands in Congressional circles for a greatly expanded Air Force establishment.

Introduction of 21 bills relating to a wide variety of aviation activity is believed to be unprecedented in the annals of Congress. Never before, it has been stated, has a Congressional study group followed up its recommendations so quickly with such a wide variety of implementing legislation. Many of the Morrow Board recommendations on Air Policy in 1925 never came before Congress in the form of legislation.

Among the more important bills introduced is one which would give the Secretary of Defense authority to contract for the development and construction of military aircraft on a five year basis. This bill, S. 2447, gives the Secretary broad powers in carrying out a program which the aircraft industry has recommended ever since the termination of hostilities.

Congress would keep a watchful eye on aviation policy and aviation needs on a continuing basis through a bill which establishes a Joint Congressional Committee on Aviation Policy of 14 members, four each to be chosen from the majority parties in House and Senate and three each from the minority parties in both houses.

Purpose of the committee is "to provide for the continuing development of a national aviation policy, study the current and future needs of American aviation, conduct a continuing comprehensive analysis and review of the air defense and commercial capabilities of the U. S. and transmit to Congress biennial reports containing comprehensive statements of its findings and conclusions, and its recommendations for policies to be adopted and legislation to be enacted."

An important bill introduced which April 15, 1948

is accorded little chance of passing this year involves the proposed reorganization of the Civil Aeronautics Authority.

The position of the Civil Aeronautics Board would be strengthened by complete divorcement from the Department of Commerce, the Board would be given an executive director who would be responsible for the administration and enforcement of Title V of the Civil Aeronautics Act, of the minimum standards, rules, regulations and certificates issued under Title VI of the Act; the Office of Director of Civil Aviation would succeed the Civil Aeronautics Administration, under which would be created the Bureau of Federal Airways Service and the Bureau of Aeronautical Development, and an office of Air Safety would be created with the director a qualified pilot who would have charge of accident investigation.

The Air Coordinating Committee would be given statutory authority, with an executive secretary to direct its affairs. Decisions would be by majority rule rather than on an unanimous basis as is now the case. There would be an industry advisory panel.

Other bills provide for all first class mail to be carried by air; establishment of an air parcel post service, repeal of

the transportation tax on persons and property carried by air, state enforcement of Federal safety regulations, avoidance of multiple taxation of air commerce, regulation of interstate contract carriers, provisions for the settlement of claims arising from the termination of contracts of the armed services and elimination of requirements that air carriers pay customs employees for overtime services.

Title to the bills, names of sponsors, committee reference and bill numbers are listed below:

(1) To provide for the planning of military aircraft requirements, to authorize the development and procurement of military aeronautical equipment, S. 2447 by Sen. Albert W. Hawkes (R., N. J.) to Armed Services; H. R. 6155 by Rep. Charles Clason (R., Mass.) to Armed Services.

(2) To provide for coordination of aviation policy, to improve the Administration of the Civil Aeronautics Act of 1938, and to provide for an independent office of air safety, S. 2448 by Sen. Owen Brewster (R., Me.) to Commerce; H. R. 6144 by Rep. Carl Hinshaw (R., Calif.) to Commerce.

(3) To amend the Civil Aeronautics Act to provide for the regulation of interstate contract carriers by air, S. 2449 by Brewster, to Commerce; H. R. 6149 by Rep. Charles A. Wolverton (R., N. J.) to Commerce.

(4) To provide for the settlement of claims arising from the termination of contracts of the armed services, S. 2450 by Brewster, to Judiciary; H. R. 6152 by Clason to Judiciary.

(5) To encourage the development of an international air transportation system adapted to the needs of the foreign commerce of the U. S., the postal service and the national defense, S. 2451 by Brewster, to Commerce.

(6) To amend the Civil Aeronautics Act



New CAB Members—The Civil Aeronautics Board returned to full five man strength April 6, Joseph J. O'Connell, Jr., (left) was sworn in as a member, and by Presidential letter of authority became chairman for period expiring Dec. 31, 1948. Previously, on Mar. 29, Harold A. Jones (right) was sworn in to serve out the term of Col. Clarence M. Young, resigned, whose term expires Dec. 31, 1952.

with respect to local enforcement of safety regulations of civil aviation, S. 2452 by Hawkes, to Commerce; H. R. 6147 by Wolverton, to Judiciary.

(7) To provide for the avoidance of multiple taxation of air commerce, S. 2453, by Hawkes, to Finance.

(8) To amend the Civil Aeronautics Act to make further provisions for the recording of title to, interests in, and encumbrances upon certain aircraft, S. 2454 by Sen. Homer Capehart (R., Ind.) to Commerce; H. R. 6148, by Wolverton, to Commerce.

(9) To amend the Civil Aeronautics Act by limiting the liability of certain persons not in possession of aircraft, S. 2455 by Capehart, to Commerce; H. R. 6146 by Rep. Karl Stefan (R., Neb.) to Commerce.

(10) To provide safety in aviation and to direct an investigation of the causes and characteristics of thunderstorms, S. 2456 by Capehart, to Commerce.

(11) To provide for an air parcel post service, S. 2457 by Capehart, to Post Office and Civil Service; H. R. 6157 by Rep. Francis Case (R., S. D.) to Post Office and Civil Service.

(12) To provide for the more expeditious carriage of domestic and foreign first class mail by air, S. 2458 by Brewster, to Post Office and Civil Service; H. R. 6156 by Case to Post Office and Civil Service.

(13) To amend the Tariff Act of 1930 so as to permit pilots, officers, or crewmen of aircraft operated in foreign service to bring in duty free, once in 120 days, articles, not purchased for resale, in value up to \$100, S. 2459 by Brewster to Finance.

(14) To exempt air carriers from statutory provisions requiring payments for compensation for customs employees' overtime services, S. 2460 by Hawkes, to Commerce; H. R. 6145 by Hinshaw, to Ways and Means.

(15) To exempt Canadian citizens and aircraft crewmen from certain visa requirements, S. 2461 by Brewster, to Judiciary; H. R. 6154 by Clason, to Judiciary.

(16) To amend the Mitigation Acts of 1917 and 1924 to permit the mitigation of certain fines, S. 2462, by Brewster, to Judiciary; H. R. 6151 by Stefan, to Judiciary.

(17) To repeal tax on transportation of persons and property, S. 2463 by Hawkes, to Finance; H. R. 6150 by Stefan, to Ways and Means.

(18) To authorize the U. S. Maritime Commission to provide for the development of lighter-than-air rigid airships for commercial use, S. 2464 by Hawkes; H. R. 6153 by Clason, to Merchant Marine and Fisheries.

(19) To amend the Civil Aeronautics Act by redefining certain powers of the Administrator, S. 2466 by Brewster, to Commerce.

(20) To establish a Temporary Commission on Military Contract Audits, S. J. Res. 204 by Hawkes, to Armed Services; H. J. Res. 370 by Case to Armed Services.

(21) To establish a Joint Congressional Committee on Aviation Policy, S. J. Res. 205 by Brewster, to Commerce; H. J. Res. 309 by Hinshaw, to Rules.

MAIL RATES

Long Overdue Pay Hikes

It was generally agreed that the more than \$20,000,000 loss incurred by the U. S. domestic airlines last year stemmed, in part, from disparities in the mail pay rates set by the Civil Aeronautics Board. On April 7 the CAB moved to grant much-needed, long-overdue relief to seven carriers—five major trunklines and two feeder airlines—in the form of increased mail pay.

Affected by the Board's action were: the "Big Four" domestic airlines—United, American, TWA, and Eastern—plus



At EAL Anniversary Party— Celebrating the 10th anniversary of the organization of Eastern Air Lines, Capt. Eddie Rick-enbacker, president and general manager, was host to company directors and to press and magazine editors in the Hotel New Yorker on Mar. 29. Seated left to right are Hugh Knowlton, of New York City; Laurence S. Rockefeller, New York City; J. Ford Johnson, New York City; Rickenbacker; Frederick Warburg, New York City; Paul M. Davis, Nashville, Tenn.; standing left to right, Paul H. Brattain, New York City, first v.p.; Everett R. Cook, Memphis, Tenn.; Stuyvesant Peabody, Jr., Chicago; Glenn H. McCarthy, Houston, Tex.; Paul E. Reinhold, Jacksonville, Fla.; James M. Cox, Jr., Dayton, O.; George B. Howell, Tampa, Fla.; S. L. Shannon, New York City, 2nd v.p.; J. W. Moore, New York City, assistant secretary and assistant treasurer; T. F. Armstrong, New York City, secretary and treasurer. All are EAL directors except Johnson and Warburg. Wiley L. Moore, Atlanta, Ga., another director, was absent when photo was made.

Northwest, and two feederlines, Monarch and Trans-Texas. The latter were offered a temporary mail rate based on a graduated scale which would decrease mail pay as passenger volume goes up. The former—the "Big Five"—were issued a show cause order proposing an entirely new formula which would increase their mail payment an estimated \$5.5 millions this year.

The CAB's new formula sets a successively lower ton-mile rate for each increment to the overall mail volume of each carrier, and provides an automatic and equitable adjustment of the effective yield per ton-mile when there are any substantial changes in mail volume.

Under the formula, mail ton-miles per day are divided into eight increments, starting at 0 to 2,500, then 2,501 to 5,000, then increasing in increments of 5,000 to 30,000 and over. Ton-mile mail rates applicable to these increments start at 75c for the lowest and graduating downward to a rate of 40c for the highest. The indicated ton-mile mail rate applicable to each block of mail ton-miles performed applies, in practice to the actual mail volume in each block, so that each successive increment is carried at a lower ton-mile rate.

What It Means. This proposal, it was estimated, would in 1948 yield increased mail pay amounting to \$1,338,000 for American, \$890,000 for Eastern, \$253,000 for Northwest, \$1,376,000 for TWA, and

\$1,414,000 for United.

The ton-mile yields for AA, EAL, TWA and UAL, all currently receiving 45c, would amount this year to an estimated 62.62c, 68.38c, 61.45c and 59.70c, respectively, or an average of 63.04c per ton-mile. Northwest, now receiving 60c, would get an estimated 70.90c under the proposed formula.

The proposed increase, if accepted by the airlines, would be effective from Jan. 1, 1948. American, which did not have an application on file for increased mail pay but was brought into the order by CAB's own initiative, would have its increase date from April 7, if accepted.

As badly as they needed more mail pay, it was not certain this week that the carriers would see fit to accept the proffered increases without qualification, since all but American had been asking for rates much higher than those proposed in the show cause order. United, for example, had asked for a mail rate of \$2.25 per ton-mile.

At least one carrier was quick to make known its dissatisfaction with the CAB proposal. Warren Lee Pierson, chairman of the board of TWA, came out next day with a statement that the suggested rates were "definitely disappointing." TWA, and perhaps other members of the Big Five group, was expected to file formal objections to the show cause order. Date for filing exceptions to the five permanent rate orders is April 19.

RATES & TARIFFS

Meanwhile, CAB had also issued show cause orders to place the proposed permanent rates into effect immediately as temporary rates, and it was expected this move would be opposed, too.

Three additional show cause orders proposed the same temporary rates for American's route to Mexico City, United's route to Hawaii, and Eastern's to San Juan, P. R., as those offered for the carriers domestic routes.

There was little question of rejection or acceptance in the case of the two feeders; they would accept the new rates, to which Member Harlee Branch had written a vigorous dissent.

Branch said he viewed with apprehension "the ever-increasing amount of mail compensation that is being required to maintain the feeder lines" . . . and wondered "whether it is not the duty of the Board in the public interest to make some re-examination. . . ."

As an illustration of the "disproportionate support" the government is giving the feeders, he cited figures showing that the average feederline passenger pays a fare of \$9.61, while the mail pay averages \$17.47 per passenger, or almost twice as much. Monarch, after 16 months of operation, averaged only 3.30 passengers per plane mile, he said, and Trans-Texas, in five months of operation had attained an average passenger load of only 1.42 passengers per plane mile.

Branch said the additional mail pay provided in the Monarch and Trans-Texas awards and proposed under a show cause ordered recently issued to Challenger Airlines would come to about \$700,000 for 1947 and 1948. He suggested that CAB investigate to see what could be done to cut down mail pay requirements of the feeders through curtailing schedules on light-traffic segments or suspending such segments entirely.

Included in Branch's dissent was the following table showing for each feederline in operation during all or part of 1947 the average passenger load, the mail compensation reported by each carrier under the established graduated scale temporary rate, expressed in the form of mail pay per passenger carried, and the amount of the average feeder passenger ticket:

	Average Passenger Load	Average Mail Pay Per Passenger	Average Passenger Ticket
Challenger	4.50	\$32.58	\$12.84
Empire	2.76	40.29	11.59
Florida	1.33	55.11	6.91
Monarch	3.30	35.85	12.13
Pioneer	7.72	16.40	12.37
Southwest	8.30	9.19	7.95
Trans-Texas ..	1.42	87.34	10.05
West Coast	6.15	9.63	6.90
Average ...	5.65	\$17.47	\$ 9.61

(Note: Pioneer's mail rate is a permanent rate lower than the initial temporary rates for feeder lines more recently certificated.)

April 15, 1948

EAL's Excursion Fare

When National Airlines came out last month and filed with CAB a bargain round-trip summer excursion rate to take effect May 1, Eastern Air Lines was quick to follow up with a competitive rate to become effective on the same date between selected points on its system, segments of which closely parallel NAL's routes. Last week Eastern had a better idea.

Instead of restricting the reduced rates (equivalent to a 75% reduction in the price of the return half of a round-trip) to 18 major eastern and southern cities, it proposed to re-issue its excursion-fare tariff and make the 18-day round-trip reductions applicable on its entire route system with the exception of San Juan, Puerto Rico. Only stipulation attached to the reductions was that a minimum of \$15 would be set on the cut-rate fares.

One airline source computed the excursion fares at the proposed round-trip rates to average about 3.5c a mile, which would be getting pretty close to the 3c fare which has often been publicized as the tariff level likely to stimulate mass air travel.

Northwest Rebates \$3,000

Northwest Airlines' action last month in offering a 5% refund of full fare to all passengers reaching their destinations more than 30 minutes behind schedule was unprecedented in airline history, but company officials felt confident that schedule delays could be reduced to a point where the refunds would help (operationally and from the passenger goodwill standpoint) more than they would hurt (in the out-of-pocket expense). After the first two weeks of operation of the plan, they could not foresee what the ultimate answer would be, but the outlook was good.

In the period from Mar. 15 through Mar. 31, Northwest paid out \$3,000 to passengers on 329 flights which failed to beat the 30-minute deadline. Out of 3,128 scheduled arrivals over the company's domestic route system during the two-week period, 2,799—or 89.5%—got in under the wire, and the company said its records indicated this to be an improvement of 40 to 50% in on-time arrivals during previous comparable periods.

Of the 329 late arrivals on which NWA had to pay off, 202 were less than an hour late, and 80% of all the delays were found attributable to weather and airport traffic. It was felt that the record would improve considerably between April and October, when weather is an inconsequential factor in operations along NWA's domestic routes, and as NWA field organizations became increasingly proficient in time-saving procedures.

Although the passengers collecting re-

funds comprised less than 5% of the 24,000 passengers carried during the two-weeks period, and the payments cost the company only \$3,000, it was enough to bring from Croil Hunter, president and general manager, a declaration that an on-time-all-the-time goal had been made a cornerstone of Northwest's operations.

Atlantic Fares Up \$25

The one-way base rate for service across the North Atlantic between New York and London went up from \$325 to \$350 on April 1, with similar increases applying to other trans-Atlantic fares. Round-trip discounts of 10% were unchanged.

Rising costs of operations were held responsible for the increase, which had been recommended by the International Air Transport Association Traffic Conference and was approved by the governments of the nations whose airlines were affected. The new rates apply on nine trans-Atlantic airlines.

Panagra Cuts DC-6 Charge

Transport planes as fast and luxurious as the Douglas DC-6 can command a slight premium fare, in the view of most airlines who operate them, and the traveling public generally concurs. It came as a surprise, therefore, to customers of Pan American-Grace Airways when it was announced that Panagra's DC-6's would be returned to service this month without an extra fare charge.

No official reason was given by the company for the reduction, but it was obvious Panagra would benefit through being able to offer faster service than competitors while meeting their fares. The new standard fare filed with CAB would apply on DC-6 flights from Miami south, the Miami-Balboa sector being operated for Panagra by Pan American Airways through trackage lease.

Other users of the DC-6 continued to charge a premium fare, had no comment to make regarding Panagra's action.

25c Per Mile Ferry

A passenger fare of 25c a mile sounds high for any kind of transportation, but Island Air Ferries, Inc., which proposes to charge fares that high on some segments of the local service air route it plans to open on June 1 in the New York-Long Island-Connecticut area, believes it can justify them.

Frederick H. Smith, president of the company, said geography in the company's route area, together with inadequacies of surface transport, made it possible for Island Air Ferries to charge high per-mile fares and still undersell railroad fares in addition to providing substantial savings in time.

An air fare of \$5.65 or 21c a passenger mile between Easthampton, L. I. and New London, Conn., for example, would be 56c less than railroad fare and would

offer a saving of 4 hours 15 minutes in travel time. Fare between Central Long Island and Bridgeport will be \$3.51 (or 13.5c per mile) which is the same as for surface travel, and the saving in time will be three hours. The fares are set on a geographical basis.

On IAF's route segments in the "commuter area" of New York City, fares will graduate down to 6c a passenger mile, and will be exempt from transportation tax if commutation tickets are used.

"Equalized" Fares: Delta Air Lines, in connection with start of service into New Orleans from the east on April 1, "equalized" its fares so that passengers flying between Atlanta and Dallas-Fort Worth might choose a New Orleans alternate routing, including a stop-over, without having to pay any extra fare because of the longer distances involved. The "equalized" fares also were made applicable to all cities on the Delta system east of Meridian, Miss., and west of Shreveport, La.

Common Rate: A common rate fare from all Pacific Coast points served by scheduled airlines to the Orient has been announced by Philippine Air Lines. The common rate of \$726 will save travelers up to \$38.65 in the price of one-way tickets from certain points.

Fare Reductions: Pacific Northern Airlines this week put new reduced fares into effect from Seattle to Cordova and Yakutat, Alaska. The Seattle-Cordova rate was cut from \$120 to \$100 one-way, and the Seattle-Yakutat fare from \$115 to \$105. Round-trip fares offer a 10% discount.

FINANCIAL

Break-Even at 45%

Ultimate goal of the airlines "must be to reduce the break-even passenger load factor to 50% and the break-even payload factor of 45%," Harold D. Koontz, TWA assistant to the president-planning, told the Air Transport Association's Engineering and Maintenance Conference in Kansas City on April 1.

Koontz blamed much of the industry's financial troubles on soaring direct costs. "There are still, of course, substantial indirect cost savings which can yet be made," he said. "But greater progress has been made in the reduction of indirect cost than direct. In TWA, we see the probability that the ratio of indirect to direct costs will drop from a wartime level of 1.6 to a future level of .7 or .8. While some of the drop in this ratio is due to the increase in direct costs, it does reflect considerable savings in indirect costs.

"Whatever this ratio should be, it points out that our direct flying costs are rising too fast and that future savings cannot be accomplished merely by further reduction in our administrative and station personnel budgets."

Koontz was not yet convinced that the industry was pooling its technical research to the extent necessary for maximum cost reduction: "We design many 'fixes' on which another airline may already have the answer."

Standardizing of engine, aircraft and accessory designs among airlines, he declared, could pay considerable dividends. "I see no reason for each airline to have different cockpit arrangements, to have a different set of engine accessories, or important differences in basic design of the same type of aircraft," he explained.

Koontz told the engineers that the economic success of the airlines under private enterprise "depends less than has been realized on airline business management and more on the engineering and technical skill of those who make its operation safe and dependable, yet simple and efficient."

PAA Tops in Earnings

Operating in the face of the greatest amount of competition and the highest costs in its history, Pan American Airways Corp. last year topped all U. S. air carriers in net earnings, reporting an estimated net income of \$2,950,000 after setting aside \$1,960,000 for Federal income taxes and a reserve of \$1,000,000 against estimated 1947 mail revenues.

Gross revenues for the year amounted to \$142,362,000. These included \$94,422,000 in passenger revenue (as against \$69,400,000 in 1946), and \$13,505,000 in air freight revenue (as against \$9,580,000 in 1946). The company's reported U. S. mail revenue for 1947 was put at \$22,535,000, of which \$16,813,000 was based on temporary and permanent mail rates now in effect and the remainder represented an estimate of additional mail pay deemed to be ultimately receivable.

EAL First Among Domestic

Eastern Air Lines' 1947 net earnings of \$1,259,196—53c per share after taxes—was better than that of any other domestic airline. It had earned a net of \$3,504,643, or \$1.46 per share, in 1946.

The profit on 1947 operations represented 2.4% of gross revenues amounting to \$52,411,248, highest in company history and up \$10,287,531 or 24.4% over the previous year. Operating expenses for last year, reflecting increased costs of labor and materials, the expense of integrating EAL's new-type Constellations, construction of new hangar and terminal facilities, and adoption of new loading procedures and a new reservation system, amounted to \$49,642,052.

Eastern's 1947 traffic volume was below its expectations, but improved techniques in handling passengers and cargo and expediting on-time operations were expected to bring results.

TWA Has Biggest Loss

Highest 1947 net loss among the airlines was TWA's \$8,079,761 on its combined transcontinental and international operations, based on operating revenues of \$78,521,000 and operating expenses of \$85,345,000. However, the year brought marked improvement from 1946, when the net loss was \$14,353,237.

Although unable to prevent over-all expenses from rising (the one item of wages and salaries went up from \$36,924,000 in 1946 to \$40,607,000 last year), TWA showed improved efficiency in that its costs per available ton mile, standard yardstick of operating efficiency, showed 35c in 1947 for its transcontinental operations, as compared to 43c in 1946, and 67c in 1947 for overseas operations, as against \$1.19 for the previous year.

It was pointed out that \$5,723,523 of



Engineers Hear Koontz— Economic success of the airlines depends on engineering and technical skill of those who make operations safe and dependable, Harold D. Koontz, assistant to the president-planning for TWA, told ATA's Engineering and Maintenance Conference in Kansas City, April 1. J. W. Miller, president of Mid-Continent Airlines, (left) was toastmaster for the conference banquet. On right is R. E. Geror, of Northwest Airlines, retiring E & M chairman.

TWA's 1947 net loss was incurred during the first quarter of the year, and the company felt that the record for the last nine months of the year reflected considerable progress toward maximum operating efficiency. Drastic economies in all departments, plus the consolidation program of the company, were credited with the improved showing.

AA Loses \$2.9 Million

Another carrier which dipped heavily into the red ink in its 1947's fiscal record was American Airlines, which, despite the highest gross revenue in the company's history, incurred a net loss of \$2,963,000 after a tax carryback of \$2,240,000 and before dividends on the company's preferred stock.

Gross revenues of the company for the year totaled \$81,731,000, an increase of 20% over the 1946 gross of \$68,083,000, reflecting increases in both passenger and cargo traffic last year in the face of declining travel by surface transportation. But it was not enough.

Operating expenses went up to an all-time high of \$86,252,000, up 25% over 1946. Wages and salaries increased to \$41,034,000 from \$34,024,000, despite a reduction in personnel from 14,266 to 12,130 employees. Gasoline costs increased 49%, from \$5,216,000 in 1946 to \$7,781,000 last year. Flight depreciation expense was \$8,783,000, as compared to \$4,942,000 in 1946.

Charged to the company's reserve for transition to peacetime operations, rather than to operating expenses, were several items aggregating \$2,988,000, including the cost of cancellation of a contract to purchase Republic Rainbow aircraft and losses on disposal of surplus and superseded aircraft parts.

Unfavorable factors which contributed to the 1947 loss were: an estimated \$3.5 millions loss in potential gross revenues as a result of the DC-6 grounding, which already had cost the company \$1,172,000 in training expenses; delay in delivery of the new twin-engine Convair Liners, causing a deferral in retirement of older and less economical equipment; a substantial increase in total available seat miles operated, more than offsetting increased traffic and resulting in lower load factors than in 1945.

C & S Cuts Expenses

It hoped to have an entirely different story to tell when the Civil Aeronautics Board finally acts upon its pending application for a permanent mail rate, but on the basis of the current rate, Chicago and Southern Air Lines had to report a net loss of \$779,865 in its 1947 annual report to stockholders. This compared to a loss of \$1,005,680 for 1946.

Unlike most air carriers, C & S was able to reduce its operating expenses last year—\$8,808,914 against \$9,445,646 in 1946. Total 1947 operating revenues of \$8,041,304 were \$179,342 below those for 1946.

April 15, 1948



New EAL Look—Eastern Air Lines' fleet of DC-3's, DC-4's and Constellations is getting a new look. Pictured in flight with the new markings is a Constellation featuring the slogan, "FLY—EASTERN AIR LINES" on the fuselage above the windows, instead of the long familiar phrase, "THE GREAT SILVER FLEET." The latter is now enclosed in a shield just above "EASTERN AIR LINES" on the aft section. An additional flag is located on each side of the fuselage, just aft of the pilots' compartment.

LABOR

NAL Strike in 3rd Month

As the strike of ALPA pilots against National Airlines entered its third month, legal actions multiplied but the airline continued to increase services and push toward normal pre-strike operations.

Latest court action came on April 8 as the Civil Aeronautics Board, at the request of the Circuit Court of Appeals in Washington, agreed to stop payment on its order granting temporary back mail pay of \$545,000 to NAL, until the court has an opportunity to review it. The Air Line Pilots Association appealed to the court on grounds that CAB failed to consider Section 401 (1) of the Civil Aeronautics Act in making the pay award. This section deals with labor relations.

A conference in Washington last week between David L. Behncke, ALPA president, and Frank P. Douglass, chairman of the National Mediation Board, set reports in motion that some new development might be expected.

Two possibilities were suggested. One is that Behncke, in order to get the dispute back on a national emergency basis, might decide to have all ALPA pilots refuse to fly into any terminal served by NAL. Such action could result in creation of an Emergency Board by President Truman. This would take the case back into the negotiations state.

Other possibility was that the union leader might try to re-activate the offers of both parties, made last year, to agree to appointment of a neutral to settle the dispute.

Meanwhile, NAL has returned its

DC-6's to service on four-hour non-stop schedules between Miami and New York, and was to send them into Washington on April 15.

EAL Retirement Plan

A retirement income plan, recently adopted by Eastern Air Lines' board of directors, will be acted upon April 27 at the annual stockholders meeting in Wilmington, Del. Based on a group annuity contract with the Prudential Insurance Co. of America, the plan involves deposits by eligible employees and contributions by the company. Normal retirement ages under the plan are 60 for pilots and co-pilots, 65 for others.

Contract for Dispatchers

The Air Line Dispatchers Association has negotiated a contract with West Coast Airlines providing a wage scale for flight dispatchers starting at \$375 a month for the first six months and graduating to \$550 a month for the seventh year. The agreement is comparable to and even more favorable than some of the union's contracts with trunklines.

Seek ALPA Aid. Pilots of Transocean Air Lines, of Oakland, Calif. are said to have requested the Air Line Pilots Association to represent them in collective bargaining matters with their company. Similar organization work is going on among the pilots of California Eastern Airways, ALPA headquarters stated. Orvis Nelson, president of Transocean, is a former v.p. of ALPA. The Transocean negotiations are believed to represent the first effort of ALPA to organize pilots who fly for non-certificated carriers.

AF Orders Cargo Transports

The Air Force on April 2 confirmed that a contract has been signed with Lockheed Aircraft Corp. for purchase of 10 C-121-A cargo type Constellations, and simultaneously announced an order for 27 Boeing C-97 Stratofreighters. Total cost was estimated at \$32,000,000, with the Connies costing about \$12,000,000.

Meanwhile, it was understood that negotiations are continuing for purchase of 10 DC-6 transports from Douglas Aircraft Co., although AF officials refused to confirm this.

The new contracts were being let from funds appropriated for fiscal '48 and prior years. Still other contracts for transport aircraft are expected to be awarded before these appropriations are exhausted.

The AF, in approved Budget Bureau requests for '49 funds, is believed to have allocated \$46,000,000 for purchase of 65 new transports, with spare engines and parts bringing total appropriation to \$65,000,000. The AF is now justifying these requests before the War Department subcommittee of the Appropriations Committee.

The C-97's will be used on world routes of the new Military Air Transport Service. They can carry 137 fully equipped troops or 40,000 pounds of cargo for 4,000 miles. The new order brings to 40 the total number purchased by the AF.

ROUTE CASES

Branch Upheld by CAB

CAB in a formal opinion issued April 7 denied motions of Colonial Airlines and request of Member Harilee Branch that the latter be disqualified from taking any further action in the Middle Atlantic Area and Boston-New York-Atlanta-New Orleans Cases. Simultaneously, Branch himself issued a public statement in which he said that "after due deliberation" he had decided not to participate in any further proceedings in either of the two cases.

Speaking of Colonial's charge that a son of Branch was formerly in the employ of a firm of attorneys representing Eastern Air Lines, the Board stated: "Under the circumstances, the relationship of Member Branch to Eastern was so remote as to preclude any suggestion that he was or could reasonably be influenced by such connection. Indeed, the allegation of Colonial is so without justification in law or fact that it could properly be regarded as frivolous and dilatory."

Colonial's allegation that Branch had a personal bias against it was found to be legally insufficient, unsupported by facts, and likewise "frivolous and dilatory."

In refusing to grant Branch's own request for relief from further participation, Board said that "the completely unsubstantiated claims of Colonial should not be allowed by us to force the withdrawal of any member of the Board." Ryan, acting chairman, and Jones, member, concurred in the opinion. Member Lee added a separate expression of opinion stating he was concurring "because I do not believe Colonial's motions are legally sufficient." Branch did not participate in the decision.

American Overseas Airlines' approved service plan has been changed by CAB to substitute Shannon, in lieu of Foynes, Eire, and to authorize AOA to serve Bremen-Hamburg and Cologne-Düsseldorf, Germany.

SURVEY FLIGHTS

Braniff Prepares for S. A.

Having cleared most of the obstacles that for many months had delayed inauguration of service over its certificated Latin American routes, Braniff Airways last fortnight began familiarization flights over a segment of the routes.

The first flight, which left Dallas on April 2 and returned a week later, touched at Balboa, C. Z.; Guayaquil, Ecuador, and Lima, Peru. Aboard were crews of senior pilots who will fly the route, CAA officials and a contingent of Braniff's official family, headed by R. V. Carleton, director of flight operations, and W. R. Beattie, traffic manager of the line's Latin American Division.

Braniff hopes to open service over this initial segment of its Latin American routes, via Havana, about June 1 and will go on into Buenos Aires and Rio de Janeiro as soon as it can work out satisfactory arrangements with the governments of Brazil and Argentina.

C & S Surveys Caribbean

Authorized by the Civil Aeronautics Board to proceed with developmental surveys in anticipation of the opening of direct air service to the Caribbean area via the New Orleans gateway, Chicago and Southern Air Lines last week was making an initial survey of the route.

The survey party was headed by S. A. Stewart, executive vice president of C & S, and included also J. A. Young, operations manager; T. M. Miller, general traffic and sales manager; W. W. Roodhouse, superintendent of communications, and R. W. Pears, director of flight operations.

Points covered included Kingston and Montego Bay, Jamaica; Aruba and Curacao, Netherlands West Indies, and Caracas, Venezuela. The company said further survey flights and inauguration of service were dependent on CAB action in fixing a temporary mail rate for the new route.

CAB CALENDAR

May 3—Oral argument on acquisition of control of TWA by Hughes Tool Co. (Docket 2796) 10 a. m., E.S.T., Room 5012, Commerce Bldg., Washington. Postponed from April 1.

June 14—Hearing in Capital Airlines, Mail Rate Case. (Docket 484). Postponed from May 15.

Aviation Calendar

Apr. 15—National Aircraft Standards Committee Council Meeting, Hotel Statler, Washington.

Apr. 16-17—National Aircraft Standards Committee National Meeting, Hotel Statler, Washington.

Apr. 17-18—Southern States Air Carnival, Montgomery, Ala.

Apr. 20-21—Annual Third Regional Aviation Conference (CAA and NASAO), Minneapolis, Leamington Hotel.

Apr. 22-24—Aviation and Airport Management Conference, Minneapolis, Minn., sponsored by Dept. of Aeronautics, U. of M., and League of Municipalities.

Apr. 22—ACC Flight Panel Meeting on ICAO Performance and Temperature Accountability Requirements, Commerce Bldg., Washington.

Apr. 22-24—American Helicopter Society Fourth Annual Forum, Philadelphia.

Apr. 23-24—Flying Farmers Associations of five states meet, University Farm Auditorium, St. Paul, auspices Minnesota Association.

Apr. 24—Dedication of Skyways I and II and dedication at various cities.

Apr. 27-May 26—Second Annual Foreign Transportation Institute, American University, Washington, D. C.

May 5-6—Air Transportation Education Conference, Purdue University, Lafayette, Ind.

May 12-15—Aviation Writers Association National convention, Commodore Hotel, New York.

May 18-20—Aircraft Industries Association Directors meet, Williamsburg, Virginia.

May 29-30—New England Seaplane Regatta, Lake Winnepesaukee, N. H. (Sponsored by AOPA).

June 1-6—All-Woman Air Show, Miami, sponsored by Florida chapter, Ninety-Nines.

June 8-10—Airport Management Conference, Texas A&M College, College Station. (Dean Howard W. Barlow in charge). (Formerly scheduled for June 15-17).

June 14-15—Airlines Medical Directors Association annual meeting, Royal York Hotel, Toronto, Canada.

June 16-18—Aero Medical Association 19th annual meeting, Royal York Hotel, Toronto, Canada.

June 17-18—Aviation Distributors and Manufacturers Assn. mid-year meeting, Grand Hotel, Mackinac Island, Mich.

International

Apr. 30—ICAO Rules of the Air and Air Traffic Control Div., Montreal.

May 4—ICAO European-Mediterranean Regional Meeting, Paris.

May 17—ICAO North Atlantic Regional Meeting, Paris.

May 17—ICAO Facilitation Division, Geneva.

May 25—ICAO Council, Fourth Session, Geneva.

May 28—ICAO Legal Committee (Geneva).

Airlines File 1947 Salary Reports with CAB

The Civil Aeronautics Board has received Schedule E reports showing officers' and directors' salaries for the following airlines during calendar 1947:

Colonial Airlines

	1947 Salary	Change from 1946
Sigmund Janas, pres. ...	\$18,000	.....
Edward S. Ridley, v. p. ...	9,999	.....
Branch T. Dykes, v. p. and dir.	13,500	+ 1,500
Alfred M. Hudson, v. p. ...	9,133	+ 433
Sigmund Janas, Jr., v. p. ...	7,600	.....
James F. Gormley, treas. ...	6,425	.....
Warren C. Cooper, Jr., secy. ...	1,850	.....
K. Hamilton, secy.	6,000	.....
W. J. Byrne, treas. and dir. ...	4,583	- 2,083
Eugene P. Barry, dir. ...	140	.....

Delta Air Lines

	1947 Salary	Change from 1946
C. E. Woolman, pres. and gen. mgr.	\$18,000	.....
C. E. Faulk, chairman of board and dir.	12,000	.....
Charles H. Dolson, v. p.-op.	17,048	.....
Laird C. Parker, v. p.- traffic and dir.	12,000	.....
L. B. Judd, comptroller, asst. secy., and dir. ...	9,600	+ 200
Travis Oliver, treas. and dir.	1,200	.....
C. H. McHenry, secy. and dir.	1,200	.....
Catherine Fitzgerald, asst. treas.	3,675	+ 75

Hawaiian Airlines

	1947 Salary	Change from 1946
Stanley C. Kennedy, pres. ...	\$ 6,000	- 1,010
Alexander Smith, v. p. and secy.	13,333	- 506
Ford Studebaker, v. p. ...	13,333	+ 213
David Watson, treas. ...	7,333	+ 7,333
Raymond C. Laclergue, asst. treas.	7,200	+ 722

NOTE: In addition to above salaries, officers and directors received the following in bonuses and indirect compensation: Kennedy \$240; Smith \$526; Studebaker \$526; Watson \$429; Laclergue \$284.

Northwest Airlines

	1947 Salary	Change from 1946
Croll Hunter, pres. and gen. mgr.	\$45,000	- 1,500
E. I. Whyatt, exec. v. p. ...	20,000	- 2,249
Linus C. Glotzbach, v. p. and asst. to pres.	17,000	+ 1,300
A. E. Floan, v. p., secy., and dir.	17,000	+ 1,300
K. R. Ferguson, v. p. eng. and planning	18,000	.....
W. Flske Marshall, v. p. oper.	18,000	.....
R. O. Bullwinkel, v. p. traffic	15,000	+ 1,500
L. S. Holstad, treas.	15,000	+ 1,500
Frank C. Judd, reg. v. p.- Western	15,000	+ 900
D. J. King, reg. v. p.- Orient	16,258	+ 4,071
Charles Stearns, asst. secy. ...	9,100
William J. Eiden, asst. treas.	10,150

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Even baby chicks—in countless numbers—travel this fastest way. In any kind of business, speed pays.

Speed pays in your business, too!

Air Express is the fastest possible way to ship or receive. Goes on all flights of Scheduled Airlines. Door-to-door service, no extra cost. And rates are low: 35 lbs. goes 800 miles for only \$8.60. 15 lbs. for \$3.80. Use it regularly. Phone local Air Express Division, Railway Express Agency, for fast shipping action.

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PERSONNEL

ADMINISTRATIVE

Admiral John H. Towers, USN (ret.), has been elected assistant vice president of Pan American Airways. A flyer since 1911, Towers retired last year as commander-in-chief of the U. S. Pacific Fleet and Pacific Ocean Areas.

Dr. Charles W. Mayo, of Rochester, Minn., staff surgeon and member of the board of governors of the Mayo Clinic, has been elected to Northwest Airlines' board of directors. **Malcolm S. Mackay**, special partner in the New York banking firm of Laidlaw & Co., also has been added to the NWA board.

Douglass R. Wood has been appointed executive representative for Braniff Airways in Havana, Cuba, replacing **John T. Long**, who will be assigned to another city on Braniff's Latin American route. Wood formerly served as manager of the company's agency, interline and foreign sales dept.

James M. Eaton has been appointed to newly created position of assistant to the vice president—metropolitan properties for American Airlines in connection with integration of the properties and facilities departments of AA and American Overseas Airlines. **D. F. Aherne** has assumed the new duties of director of overseas properties, and **C. A. Clarke** has become director of domestic properties.

G. J. Brandewiede, materials director for American Airlines, has been given the additional title and duties of materials director of American Overseas Airlines.

Albert H. Boynton has been appointed employees suggestion conference superintendent for United Air Lines, with offices at Denver.

TRAFFIC & SALES

Walter H. Johnson, Jr., has been appointed to new post of director of sales of American Airlines' eastern region, in charge of passenger and cargo sales in 10 eastern states and Canada. He has been with AA since 1940 and helped pioneer its cargo sales department.

William M. Edwards has been appointed district traffic manager of West Coast Airlines in the Seattle area.

J. L. Snell has been appointed district traffic and sales manager for United Air Lines at Portland, succeeding **George Hatch**, who resigned to enter private business. **William H. O'Donnell**, formerly chief of cargo sales at San Francisco was promoted to succeed Snell as district traffic and sales manager at Spokane.



Walter H. Johnson, Jr.
In New American Sales Post

John Eiler has been named supervisor of reservations for Capital Airlines in New Orleans, moving there from Pittsburgh, where he was reservations senior agent.

William W. Russell, formerly traffic and sales representative for Eastern Air Lines in Washington, has been appointed to same position in Wilmington, Del.

Pierre Villere has resigned as director of public relations for Chicago and Southern Air Lines to join the Bauerlein Advertising Agency in New Orleans as account executive. **J. J. Shad**, director of station sales, has assumed supervision of the airline's public relations department.



Sheets

Fox

Lewis L. Sheets, formerly with Eastern Air Lines as traffic sales manager for New York City, has been appointed head of Northwest Airlines' traffic office in Cleveland.

James C. Fox, station manager for National Airlines at Jacksonville since 1946, has been appointed district traffic manager there, replacing **William Stevens**, resigned. **L. W. Cottrell** succeeds Fox as station manager.

Robert S. Terrell, formerly regional representative for Southwest Airways in San Francisco, has been appointed manager of publicity and advertising.

Claude R. Powe, formerly publicity representative for UAL at San Francisco, has been promoted to publicity manager at Denver.

A. J. Myer, Jr., formerly assistant to the director of traffic procedures with Eastern Air Lines, has been appointed sales manager, aviation systems division, of the Whitney Duplicating Check Co., with headquarters in New York.

James T. Kilbreth, Jr., formerly assistant to the traffic and sales manager for Eastern Air Lines in New York City, has been appointed traffic and sales manager for the company in Louisville.

Maurice "Morrie" Stacy has joined the sales department of Pacific Northern Airlines in Seattle. He formerly served with West Coast Airlines in several posts, last of which was assistant general sales manager.

Edwin R. Powers, formerly traffic representative for Delta Air Lines in Atlanta, has been transferred to Asheville, N. C., and appointed traffic representative in charge of the Asheville territory.

William K. Turner, who began his career with Pan American Airways as a flight steward in 1939, has been appointed assistant to the Latin American Division traffic manager in charge of personnel.

Johan V. C. Ruardt-Wichers, previously in charge of the Near and Far East booking office of KLM Royal Dutch Airlines, has been appointed passenger traffic manager for the line's North American Division.

OPERATIONS-MAINTENANCE

Charles Caffrey, formerly assistant station operations manager for Pan American Airways at Los Angeles, has been named station operations manager at Singapore.

F. M. Probst, who has been assistant district operations manager for Capital Airlines in Pittsburgh, has been advanced to district operations manager in New Orleans, where service was inaugurated this month.

William A. Linthicum has been appointed district operations manager for Capital Airlines in Mobile. He formerly served in the Birmingham and Raleigh stations.

David M. Munro, formerly district operations manager for Capital Airlines at Willow Run Airport, has taken the same post at LaGuardia Airport.

AMERICAN AVIATION

Frederick W. Axtell, Edward H. Clay, Jack J. Larsen and Charles A. West have been appointed shift assistants to manager of ground services for United Air Lines at Chicago. Appointed to similar posts at other key system points were: Andrew Chas, Frank Maussner, Richard Hoen and Rod Quincy at New York; Ott Williams, Wayne May, Donald Fowler and Joseph Barnard at San Francisco; Lee Broyer, Ralph Moeser, Kenneth Robinson and Clarence Lees at Los Angeles; and Dale Medland, George Griffin and Ray Wanink at Seattle.

Richard P. Ensign has been named coordinator of stations of western and coastal divisions of Western Air Lines. He formerly was stationed at Salt Lake City as coordinator of WAL's northern region stations.

William Forrest McDuffie, formerly chief station agent for Delta Air Lines at Fort Worth, became station manager in Hattiesburg, Miss., where service was inaugurated this month.

John J. Woods, special consultant to the Airlines Negotiating Conference and American Airlines, has been named director of a new labor relations service established by the New York public relations firm of Russell H. Potter, Inc.

Georges de Sonchen, formerly assistant operations manager for TWA in Europe and more recently executive v.p. and general manager of Aero Transportes S.A. in Mexico, has been appointed as director of European sales for Consolidated Vultee Aircraft Corp.

Scott Hershey, formerly with American Aviation Associates, has been named to the staff of the Air Transport Association public relations department, replacing Russell Gerould, who resigned as ATA news chief to become publisher of three weekly newspapers in Maine.

Walter H. Setz, formerly chief research and flight test engineer for All American Aviation, Inc., has joined the Aero-Mechanics Dept. of the Cornell Aeronautical Laboratory at Buffalo as associate research aerodynamicist.

W. P. Slattery, who has been supervisor of the base planning section for Lockheed Aircraft Service, Inc., MacArthur Airport, Long Island, has been appointed to newly created position of sales manager.

Paul J. Papanek, flight test engineer with Goodyear Aircraft Corp. since 1941, has joined Jack & Heintz Precision Industries, Inc., Cleveland, as service manager of the aviation division.

April 15, 1948

Airline Commentary

By ERIC BRAMLEY

WAYNE PARRISH, our editor, has already written an on-the-spot account (Mar. 15 issue) of Mid-Continent Airlines' intensive program to increase its schedule reliability and passenger service . . . Nevertheless, we want to give the company a pat on the back for the information it is giving employees in the *Stargrams* which are being circulated . . . The latest one, on keeping the passengers informed, is entitled "Be Polite, Tell 'Em Right" . . . Here's a quote: "In the case of mechanical delays the mechanic is the pivot about which the whole structure of dependable information to the passenger revolves. If he passes on to the agent faulty information or fails to give out any at all, the structure collapses. That means it collapses throughout the system at every station where that equipment is scheduled to land. Repairing the aircraft is but half the responsibility that the mechanic must assume. He also has the responsibility of being a dispenser of accurate information" . . . And, talking about flight crews, the *Stargram* says: "One thing that all transportation companies strive to instill in the passenger is confidence or 'ease of mind.' How much 'ease of mind' can the passenger have who knows the flight should have landed half an hour ago but it is still milling around through an overcast so thick he can't see the wingtips? Sure, the captain knows that airways is holding him out or that he is proceeding to an alternate but has he told Mr. Passenger about it? If passenger anxiety had anything to do with flying the airplane at such a time, the jump seat and companion way would be crowded with backseat drivers. We know that most captains are very conscientious in keeping their passengers advised because there are many letters from passengers which report this" . . . MCA reports that its program is catching on . . . "Tulsa personnel really hustle when Capt. Paul Walters comes to town," it says. "Recently when running behind schedule, Capt. Walters helped load a large piece of cargo to cut his ground time to seven minutes instead of the allowed 15 minutes" . . . This reliability and passenger service campaign being conducted by MCA and some of the other airlines is certainly a sensible one that will pay big dividends . . .

The airlines have their problems . . . A Chinese gentleman by the name of Mr. Who breezed into Washington on Peruvian International Airways and at about two o'clock in the morning he wandered into United Air Lines' airport dispatch office . . . He evidently had a message to convey, but Ruth Clark, UAL communications operator, wasn't up on her Chinese, and Mr. Who didn't speak English . . . So she didn't know who Who was, and Who didn't know who she was . . . Finally she called an all-night Chinese restaurant . . . When someone answered the phone she asked if this was the proprietor, and the voice said no, this was a Chinese restaurant . . . Finally they got that straightened out and the proprietor talked to Mr. Who . . . He then explained to Miss Clark that Mr. Who was going to the coast on United and on to China via Pan American Airways . . . Furthermore, the proprietor said, please put Mr. Who in a cab and send him to the restaurant where he would be fed and put up for the night . . . The proprietor delivered him to the airport the next day . . . Ruth Clark gets a gold star for using her head . . .

We hear tell that one of the Trans-Canada Air Lines boys at Sydney had one of the local printers make him up a small sign for his personal use . . . "Please do not stare at the passenger agent. You may be crazy yourself someday," it said . . . Come, come now, it can't be that bad . . .

While on the subject of TCA, they've been testing their new North Star planes, the DC-4M2 (Merlin engines, pressurized cabin) . . . At Winnipeg, one of these planes was taken up to 32,000 ft. and the air temperature was minus 80 degrees Fahrenheit . . . TCA engineers believe this may be an unofficial record as the first time a commercial airliner has been subjected to such a low temperature during flight . . . Could this be so? . . . Anyway, minus 80 is a trifle drafty . . .

You see people wearing all kinds of clothes on the airlines, but Delta Air Lines was afraid for a minute that something new was about to be added—or subtracted . . . A Delta agent in Shreveport called a business office to confirm return space and talked to the passenger's secretary . . . Then came time to apply the time limit . . . "When does he want to pick up his ticket?" asked the agent . . . The secretary said, "Oh, he'll pick up his ticket at the airport; he travels stripped" . . . "No, no, no," shouted an excited voice in the background, "script, not stripped" . . .

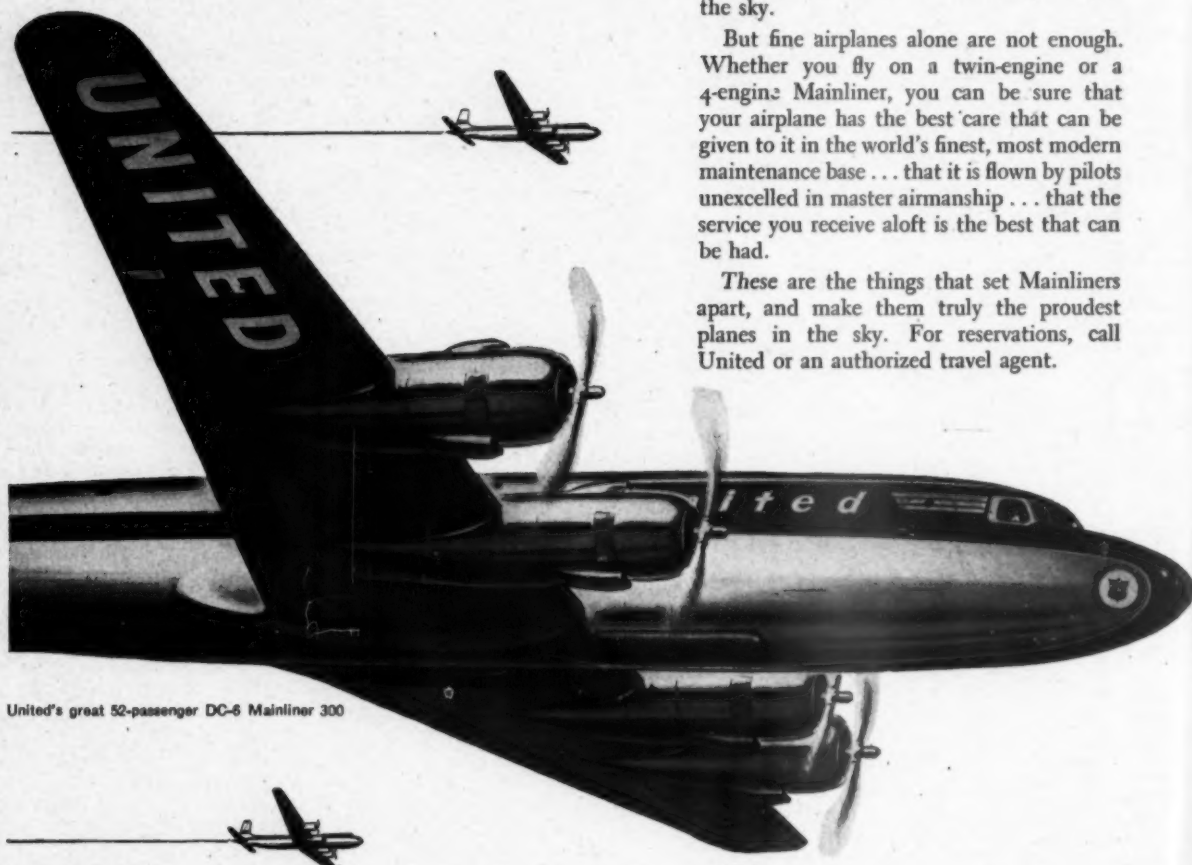
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THE MAIN LINE AIRWAY
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Airline Engineers Agree:

Instruments Need Attention

By LEONARD EISERER

Lowered weather minimums, faster planes and more of them are major factors giving increased importance to aircraft instruments in the airline industry's efforts for safe and reliable operations.

Despite this growing importance, however, consensus at the three-hour instrument session of ATA's 22nd annual Engineering and Maintenance Conference a fortnight ago in Kansas City was that instruments have become the neglected "orphans" of aircraft manufacturers. Feeling was general that too much emphasis has been placed on overall weight reduction at the expense of instrument reliability and service life.

The sizeable investment which airlines have in instrumentation was outlined by Braniff Airways' T. W. Gibson, who led the instrument discussion. Instruments over the years, he explained, have remained fairly constant in relation to cost of the entire plane: in the DC-3, instruments represented \$2,000 or 1.5% of the plane's original cost of \$125,000; in the DC-4 at \$400,000, instruments cost \$6,000 or 1.45%, while in the DC-6 at \$750,000, the cost was \$11,000 or 1.5%.

A prime reason for concern over instrumentation at the Kansas City meeting was the role the delicate gadgets play in schedule delays. Malfunctioning instruments were found responsible for up to 10% of total mechanical delays on some of the lines. Little progress was reported in easing this source of passenger gripes during the past year.

While light weight was acknowledged as a necessary consideration in airline operations, Gibson declared that both airlines and manufacturers have gone too far on instrument weight reduction at the expense of better and more reliable instrumentation and wiring. As a result, the individual instruments have not kept pace with general aircraft development. The increased potential payload achieved, at the cost of decreased reliability of performance, was held to be poor business, especially in view of present day load factors.

All airlines reported a high percentage of unscheduled removals of instruments for repair, making necessary the costly stocking of spares at many points along their routes. Some of the removals, however, are attributed to pilot judgment rather than to faulty functioning—Braniff, for example, reported that 20% of instruments removed from planes at request of pilots were found to be OK when tested in the shops.

Better training of airline shop personnel in maintenance and overhaul

was offered as a good means for approaching optimum utilization with aircraft instruments. To accomplish this, the group recommended that all instrument manufacturers distribute instruction manuals before new instruments go into use. This would eliminate difficulties experienced by several airlines who received instruments before getting data on their proper care.

Record Meeting: The four-day meetings of more than 400 airline and manufacturing representatives broke all attendance records in the 22-year history of the Engineering and Maintenance Conference. As usual almost every aspect of engineering and maintenance was covered, problems aired and operational experience exchanged between the carriers and the makers of their equipment.

As evidence of the solution of many safety problems in the field of structures and controls, 99% of the 500 items listed for discussion at the conference involved economics; tribute was paid to the manufacturers for assuming safety as a basic obligation. Indicative of improvements in aircraft engines, the discussions this year were mostly concerned with maintenance and overhaul rather than design or operating faults. And this was true with most of the parts under consideration.

The useful purpose served by this annual airing of experiences was underscored by Milton W. Arnold, ATA v.p.-operations and engineering, who estimated that scheduled airline engineer-

ing and efficiency has increased 25% in the past year due "in a large measure to the beneficial exchange of technical information made possible by this conference."

"It is significant," he said, "that despite rapidly rising operating costs which have increased as much as 30% in some cases during the past year, maintenance costs have been reduced on an industry level. Airlines have reported that even though much new equipment has been added to the airline fleet, the maintenance man-hours per flying hour have been held equal or reduced below the level a year ago. They are down several man-hours per flying hour from January, 1946."

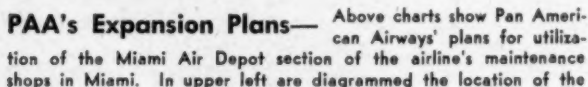
"The percentage of delays accounted to maintenance of the total airline departures has in some cases been cut in half. One airline reported a 20-22% reduction in all overhaul costs and this reduction may very well be generally true of other lines. This reduction was attributed to improved methods and procedures in the shops."

Joseph F. Martin, veteran director of maintenance for American Airlines, was elected new chairman of the E & M Conference, succeeding R. E. Geror, manager of mechanical operations for Northwest Airlines, who presided over the general assembly.

Among the airline representatives leading group discussions were D. A. Shropshire, National; T. R. Hiatt, Pan American; T. W. Gibson, Braniff, R. W. Stanley, American Overseas; E. J. Splaine, Northeast; H. J. Curtis, Trans-Canada; R. A. Graham, United; G. W. Gilmer, American; W. P. Dahnke, TWA; R. B. Ault, Eastern; H. D. Estey, Capital; R. E. McDonald, Northwest; F. R. Cassel, Colonial; J. S. Hall, Eastern; W. C. Shaw, United; R. A. Miller, American.



Convair on Rail—A wooden mock-up of the Convair Liner, soon to join Pan American Airways' fleet, arrives in Miami Fla., by rail from the Consolidated Vultee factory in California. Built at cost of \$25,000, the mock-up is slightly smaller than a regular fuselage and will be used to familiarize crews with the controls, facilities and interior arrangement preparatory to flight training.



It would take a long time—about two years—and would cost a lot of money—perhaps \$2.5 millions—but Pan American Airways announced that upon completion of work started early this month it would have at Miami International Airport the world's largest airline maintenance and overhaul shops.

The shops, to be located in nine buildings of the former Miami Air Depot leased to PAA by the Dade County Port Authority, will handle engine and air frame work not only on PAA's present fleet of 50 DC-4's and 24 Constellations, but also on the 20 Boeing Stratocruisers and the 20 Convair Liners soon to be added to its fleet, and on the DC-4's and DC-6's operated by its affiliate, Pan American-Grace Airways.

A three-way program started this month and slated for completion by early 1950 involves rehabilitation of the nine former Air Depot buildings, installation of the most modern overhaul facilities, and removal of presently scattered shops to the new location.

Electrical transformer and distribution facilities, air compressors and tanks, cleaning tanks, solvent storage equipment, air conditioning and other built-in facilities installed by the Air Force will be retained, and this will be augmented by half a million dollars worth of new machine tools and shop equipment, plus equipment to be transferred to the new

base from PAA's present engine overhaul shops at Dinner Key in Miami and from aircraft shops at LaGuardia Airport in New York.

The 1,100,000 square feet of floor space in the nine buildings, together with 350,000 square feet in the present hangars used for aircraft overhaul and line maintenance, will give PAA a total of 1.5 million square feet of space and will enable it to set up production-line techniques which will sharply cut time spent in engine and air frame overhaul work—about 30 days at present for engines and about five days for air frame. The new base, when completed, will be able to overhaul 300 DC-4 engines a month, or that equivalent in other types of engines.

In addition to transferring engine overhaul operations from the Dinner Key hangars, the company will move its training center from Coral Gables and make other space consolidations. Congestion in its present shops will be relieved through removal of the metal and nacelle repair shops, the chemical laboratory, the carpentry and paint shops and similar facilities from various hangars on the 35th Street side of the airport to the air depot section.

The company's air cargo department, now located on the 20th Street side, will move into a hangar just west of the passenger terminal, combining all cargo

various buildings. Lower left chart shows PAA's space growth in Miami compared to plane miles flown. The diagrams for engine overhaul, offices, engine test cells, aircraft accessory overhaul, and the warehouse buildings show utilization plans for these structures.

operations under one roof and expediting the loading and unloading of cargo planes.

Overhaul of engines and such accessories as starters, superchargers and ignition systems will be done in two of the larger buildings; three warehouses will be used for storage of spare engines, wings and similar bulky equipment; another building will house the training school and the engineering section; smaller buildings will be used for a cafeteria, fire station and other services. The engine test cell building at the depot will continue to be used jointly by PAA and domestic airlines operating out of Miami.

Another 1,000 machinists, technicians and inspectors will be hired in connection with the expanded maintenance and overhaul program, boosting PAA's payroll at Miami to approximately \$25,000,000 annually, according to a company spokesman.

UAL Delayed: The complete shift of United Air Lines' overhaul facilities from Cheyenne to the newly constructed maintenance base at San Francisco may be delayed by a drouth-induced power shortage in Northern California. A 20% cut has been imposed on all power users in the San Francisco area.

Lockheed Aircraft Service, Inc., has added Latin American Division of Pan American Airways, Aerovias Guest (Mexico) and Panair Do Brazil to its customer list at MacArthur Airport.



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Safety Through Simplicity

By J. J. DAVIES

Chief Maintenance Engineer
Trans-Australia Airlines

I have read, and re-read several times, the following statement attributed to Mr. T. P. Wright (ex-CAA Administrator):

"Administrator Wright expressed some concern over the large accident rate in commercial plane operation, but pointed out that many of the accidents are traceable, in part, to the process of working out the bugs in the new four engine planes."

This is an amazing statement. It indicates, as a whole, that new aircraft and accidents are simply associated. Or perhaps, more exactly the words chosen indicate a state of seeing no alternative but to co-operate what has come to seem inevitable—new aircraft and accidents. Surely this is not necessarily so. Intolerable, yes, but not inevitable.

It is altogether desirable that new types of aircraft become available from time to time. It is then inevitable that there will be bugs to deal with and remove. However, "de-bugging" is one thing, but serious accidents involving loss of life in quite a big way, and having most adverse effects on an industry we are all vitally concerned with, is another thing altogether and something altogether intolerable.

I am one who has for long thought, and am becoming more and more so convinced, that the industry is simply working to bring such trouble on itself. I refer to the heap of equipment and etceteras of all kinds now considered necessary in an aircraft. This now applies to such an extent, and the future promises more so, that the carriage of passengers and freight is almost a side-line ability by comparison with all else the aircraft carries.

Complexity Trouble

Why not simplicity anyway? Where does all this present day complexity get us except into trouble? If trouble is desired, or even tolerable, complexity is not an essential; trouble can be found in very simple ways and without having to own an aircraft to be sure of it, either.

Let's consider some of this complexity loaded into aircraft today. Take the electrical system, whereby an aircraft has been turned into a flying power-house. And yet why do we want electricity in an aircraft except to start engines, provide light during darkness (in the ocular sense) and to generally operate certain essential services which were, and could be again, quite plain and straightforward, instead of as they have become?

Then consider the hydraulic system. What's wrong with the DC-3's system, operating at 875 p.s.i., that we needed to go to the 3000 pound mark and doubtlessly beyond unless halted? Who has ever sensibly said, for example, that the 875 pounds in a DC-3's system doesn't lift her legs up and out of the way fast enough? Let's admit that the higher pressure can save some weight, but it also inevitably contains greater potential for trouble, which is worse than weight, such as leaks and bursts. So, why not have the added weight of the simpler system and still strike the desired weight balance by off-loading some of the junk?

Then the engine. There are some which plainly indicate an economy in lead pencil usage on the drawing board which makes for a plain, straightforward design. Bushes have been found to very satisfactorily replace ball and roller bearings, as one example of happy thinking. But the carburetor—or is it?

Basically the Same

An essential feature of today's apparatus, as initially advertised, was that it was non-icing. It is so, to quite some extent, in itself, but this excellent feature is still dependent on a warm air intake, because, if the normal air supply feeding the non-icing invention below becomes iced-up, and it does, all the non-icing down below doesn't help one little bit. So the non-icing carburetor with all that goes to make it so, requires basically the same air intake configuration and controls as its much more simple, although not non-icing predecessor.

Then, too, the modern "carburetor" functions at all altitudes, but who wants to fly, commercially, except on an even keel? In other words, why not call on Mr. Stromberg to bring back his plain, straightforward float-type carburetors that gave such satisfaction in years past and leave today's effort to those who must have such things? The pilots would only have to guard against icing, just as they do today anyway, but cost, initial and subsequent, would be down and so, too, the potential for trouble.

Next, ventilation. This now has a new name, "pressurization," but if this isn't still ventilation by means of a pump instead of an air scoop, well, what is it? Undoubtedly pressurization, as such, is a necessity for certain classes of operation, but the change of name has been seized upon as a grand and glorious opportunity to add bits and pieces. A simple control to a valve isn't thought good enough, there must be an electric motor, pref-

erably where most hard to get at and then not directly, but automatically, controlled.

These "automatics" are being added to such an extent as to call for a party to attend to automatics, while the old fashioned party look after what the automatics control. Then there is the inevitable tendency to rely on the automatics, instead of directing necessary attention to the essentials, whereby potential for trouble is increased!

Research and laboratories there must be, but why fly them under the guise of commercial aviation? Consider how few operators show a profit today and let's admit the chances of profit are inevitably reduced by today's complication. Let's recollect Bill Stout's statement of years ago, "Simplify and add more lightness" and apply this policy. It's a good one. Let's have the DC-3 well in mind as a very fine aircraft when considering new designs. The DC-3 contains all the essentials to commercial operation, without being loaded with non-essentials, or that is how it came out and was for years. After all, complication is not essential to modernization.

In any case, complicated, intricate or just plain simple, having to work the bugs out of new aircraft should not be considered reason for a large accident rate, with all the consequences. Reduced utilization in the early stages of service, yes, fair enough and understood desirable, but tail-up on the mountain tops, or a heap of ashes, certainly not. So much should be known to avoid this easily enough. Perhaps I'm old fashioned, but it seems plainly indicated that concentration must be towards safety through simplicity and if this expression of thought on my part can contribute to the cause, I shall be very happy.

America Sets Standards

Let's consider this point, too. It was American designers and manufacturers who originally set the world's standard for the aircraft that made commercial aviation possible. Aircraft such as Ford, Boeing, Douglas and Lockheed. Then the result: these aircraft rapidly spread over the world's air routes. And why? Because they were what operators really needed, available for the first time. Admittedly, there were aircraft available elsewhere that cost less, but their net earnings were less, too. These American aircraft contained the essentials to the case. They were clearly the result of serious, experienced thinking, and they were welcomed accordingly. Today, corresponding evidence of serious, experienced thinking is again required and I suggest the American industry has the ball. What will they do with it? They scored once before, why not again?

LANDING AIDS

GCA Contracts to Gilfillan

The first GCA Radar Landing System equipment designed exclusively for civil airport use will be installed at eight major airports in the United States during the next 24 months. A contract for the development and production of this navigational aid has been awarded by the Civil Aeronautics Administration to Gilfillan Bros., Inc., of Los Angeles.

First installation will be made at Los Angeles Airport with succeeding units scheduled for Cleveland, Atlanta, St. Louis and Boston. The new equipment also will be installed in Washington, New York and Chicago to replace the present wartime GCA equipment given to CAA by the U. S. Air Force for use at those three locations a year ago.

The new GCA will contain the latest improvements developed by Gilfillan engineers during the last six years. Among the improvements to be incorporated are: MTI, or moving target indication, which eliminates "ground clutter" from the scope showing only moving aircraft; increased search coverage showing all aircraft up to 10,000 ft. altitude and out to 35 miles radius, and the Azel three-dimensional scope which presents complete information of an aircraft's altitude, range and azimuth.

Relief for WNA Congestion

In a step designed to reduce aircraft congestion at Washington National Airport during instrument weather conditions, the U. S. Air Force has established a separate approach control facility at Andrews Air Force Base, in nearby Camp Springs, Md.

Utilizing Ground Control Approach (GCA) equipment long in operation at Andrews, the new approach control unit will be available for instrument let-downs to all military aircraft entering the Washington area. A substantial portion of Washington's air traffic is comprised of USAF aircraft.

By approving the new plan, the Civil Aeronautics Administration for the first time has cleared GCA as a primary landing aid, though civilian aircraft still will be allowed to use the Andrews GCA approach control only in emergencies.

CAA believes the option of USAF aircraft to utilize Andrews approach control, thereby affording a second bad weather landing facility, will approximately double the capacity of airports in the Washington metropolitan area under instrument traffic conditions, thus substantially reducing traffic delays.

GCA in Germany: Civil Aeronautics Administration has authorized American Overseas Airlines, Inc., to use Ground Control Approach (GCA) facilities at both Berlin and Frankfurt, Germany, but permissible minimums established

for GCA use are the same as for radio range operations. At Tempelhof Air-drome in Berlin these are 500 feet and 1 mile for takeoff, 700 ft. and 1 mi. for day landings, and 700 ft. and 2 mi. for night landings. For Frankfurt, takeoff limits are 200 ft. and ½ mi., with regular landings at 500 ft. and 1½ mi. and straight-in landings at 400 ft. and 1 mi.

SAFETY

Fire Prevention Relief

Although air line engineering and modification departments had been working overtime for some weeks in an effort to comply with amendments to the Civil Air Regulations dealing with modifications required for fire prevention, some began to despair of meeting the May 1 deadline. Last fortnight the CAB eased their worries by extending the compliance deadline to Nov. 1.

The proposed modifications apply to all aircraft operated in domestic and international scheduled passenger service and in non-scheduled irregular passenger operations.

Original deadline for the fire prevention program had been last Jan. 1, but the Board was persuaded to extend it to May 1 because so many carriers obviously were not going to be able to comply by the earlier date. Even then at least one certificated carrier and several non-certificated carriers were held up by inability to acquire necessary items required in the modifications, and the additional six-months extension was ordered. CAB warned that this would be the final extension.

MODIFICATION

Versatile DC-3

Conversion of a former cargo DC-3 to accommodate full passenger, full cargo or combination passenger-cargo loads has been completed by Aerodex Inc. of Miami, Fla., for Aerovias Brasil.

Aerodex equipped the plane with 28 collapsible, reclining chairs that fold upright against the wall to become stanchions against which cargo can be made secure. All seats may be utilized for passengers or any number may be adapted to provide cargo space.

The utilitarian seats are made of Chrome-plated steel tubing and are richly upholstered over Airfoam cushions. They were designed and manufactured by Flight Engineering and Equipment Co. of Miami.

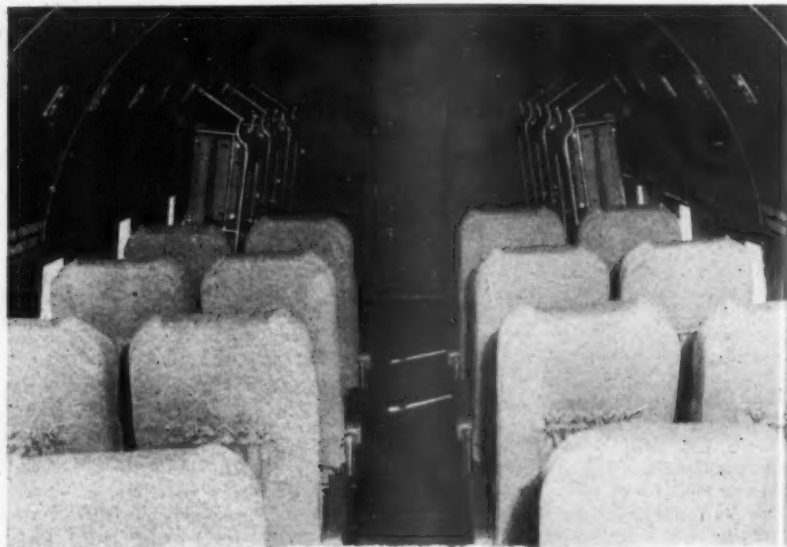
The conversion job also entailed refinishing the interior of the plane in quilted Skyfelt, insulating the fuselage, and making it soundproof and fire resistant in compliance with CAA regulations.

The versatility provided by the new interior is expected to solve numerous load problems facing air carriers, especially some of the foreign airlines.

Modified DC-6 for KLM

The first modified production model DC-6 destined for a foreign carrier has been delivered to KLM. A Royal Dutch Airlines crew headed by Capt. Ronald F. George took off in the plane at Santa Monica, Calif., for a one-stop flight to Amsterdam.

KLM's DC-6's are the first to be

**Versatile Interior—**

In this view of an Aerovias Brasil DC-3 recently modified by Aerodex Inc. of Miami, six of the double convertible seats with which the plane is fitted are secured to the walls for use as cargo stanchions. Any number of seats may be adapted in this manner to provide additional cargo space, thus making the plane capable of accommodating any cargo-passenger load combination.

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Wichita, The S. A. Long Co., Inc.,
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Louisville 4, Ellingsworth Auto Electric
Co., 1003-05 E. Broadway

MASSACHUSETTS

East Boston, Inter-City Aviation, Inc.,
Boston Municipal Airport

MICHIGAN

Detroit 5, Servair, Inc., Detroit City
Airport

MINNESOTA

Minneapolis 6, Airwings, Inc., Wold-
Chamberlain Field

NEW YORK

Buffalo, Buffalo Aeronautical Corp.,
Buffalo Airport
Mineola, L. I., Standard Aircraft
Equipment Co., Roosevelt Field

OHIO

Cleveland, General Airmotive Corp.,
Municipal Airport

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3416 Love Field Drive

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equipped with square-tipped, high activity propellers which will give the transports superior takeoff performance on the shorter runways found at some European airports. The DC-6 delivered has a combination interior, with the forward cabin outfitted as a day plane seating 32 passengers and the aft cabin equipped as a day or night sleeper plane with seats for 16 or berths for eight.

With delivery of their first DC-6, KLM becomes the only airline in the world to have flown the complete line of Douglas commercial transports in scheduled service. The Dutch line started flying DC-2's in 1934, following them with DC-3's, DC-4's, DC-5's and now DC-6's.

ENGINEERING

Non-Flammable Hydraulic Fluid

The Society of Automotive Engineers expects to start distribution May 1 of an Aeronautical Material Specification for an interim type non-flammable hydraulic fluid for use in medium altitude (up to 20,000 ft.) commercial aircraft.

The specification was prepared by a sub-committee of the Aircraft Research and Testing Committee of the Aircraft Industries Association and is now being printed by the SAE. It will be forwarded by the AIA to the Civil Aeronautics Administration for the purpose of establishing a testing program.

In its program to develop a non-flammable hydraulic fluid, the ARTC sub-committee decided to first prepare a specification for an interim type to expedite progress for commercial application. This permitted a specification to 40 degrees below Fahrenheit. The specification is not entirely non-flammable, but is considered safe under any hazard that might be encountered in commercial operation.

With the interim type prepared, the ARTC sub-committee is starting this month on a long-range fluid that would be accepted by the U. S. Air Force. This specification will require a fluid considerably below the 40 degrees below zero and entirely non-flammable. A cooperative action with the military services will be instituted to collect data and carry forward the project.

EAL Replaces Connie Props

Eastern Air Lines has replaced propellers on 13 of its L-649 Constellations following two incidents in which a blade was lost in flight. Replacements were underway at the airline's initiative prior to the Mar. 25 incident near Langley, Va.

Hamilton Standard 2F17K3-24Y paddle blade types were used to replace Hamilton Standard YA2C15G1-OB units in cases where the latter had accumulated more than 1200 hours of operation. Both blades are types normally used in reversible propeller installations. The newer type is reported to be heavier and stronger.

30 HOUR CHECK

By DAVID SHAW

TWELVE percent of United Air Lines' DC-3 mechanical delays are attributed to the ventilating system, despite fact that the DC-3 has been in service for 13 years and has a much simpler ventilating system than newer types.

At the ATA engineering and maintenance conference in Kansas City early this month quite a bit of discussion was given to whether an airline gains by overhauling its engines or sending them to a specialized engine overhaul shop. Most topics bob up year after year at these meetings, but this was the first meeting where anyone had much to say about outside overhaul.

Interestingly enough, several airlines have made studies during the past year and concluded that firms like Pacific Airmotive can complete an engine overhaul cheaper and faster than even the biggest of the airline shops. No airline went so far as to say it had decided to close its own shops and send all engines out, but we noticed a marked decrease in the way overhaul experts from the airlines defended their own work.

The leading complaint against outside engine overhaul was the expense and delay of shipping. UAL found that 40 engines would be delayed in the "pipeline" to maintain a necessary flow of overhauled engines. To offset this, an airline saves by reducing its inventory of engine parts. Cost of warehousing its large stock of spares now runs American Airlines 85c to \$1 a square foot.

Feature article in the April 1 issue of the Air Materiel Command's Technical Data Digest is on accidental firing of flash bulbs by radar. Anyone closely concerned should study the whole article. We simply want to pass along a few highlights as being of general interest.

Tests at Wright Field established that radar beams of approximately 10-cm wavelength are most active in affecting flashbulbs. When exposed to powerful S-band radar a considerable percentage of test bulbs fired or exploded within 15 seconds at distances up to 100 yards. A majority were at distances from 20 to 40 yards, and a few did not fire until exposed for as long as 16 minutes.

Airborne radar had less effect on the bulbs than powerful ground sets, but at close range was found to be potentially dangerous. After completing the tests the Air Force ordered "avoid storing or transporting (bulbs) within 100 yards of active radar sets or within five yards of active aircraft radar..." The report adds that too much confidence should not be placed in the protection which might be afforded by the metal skin of the airplane.

92 ton feather

The U.S. Navy's Lockheed Constitution (big brother of the famed Lockheed Constellation) weighs 92 tons—twice as much as the average airliner.

Yet its five-ton, dual tandem landing gear is so finely articulated that the plane can land light as a feather.

So light, in fact, that there's a signal in the cockpit to inform the pilots when the prerotating wheels touch the ground during a landing.

The gear spreads the weight of the Constitution over such a large area that the airplane can operate from any normal CAA Class 4 airport without strengthening or lengthening of runways.

More than 50,000 engineering man-hours went into Lockheed's development of the remarkable gear.

Such pioneering in design and research, in combination with resourceful production techniques, keeps Lockheed well in the forefront of aviation.

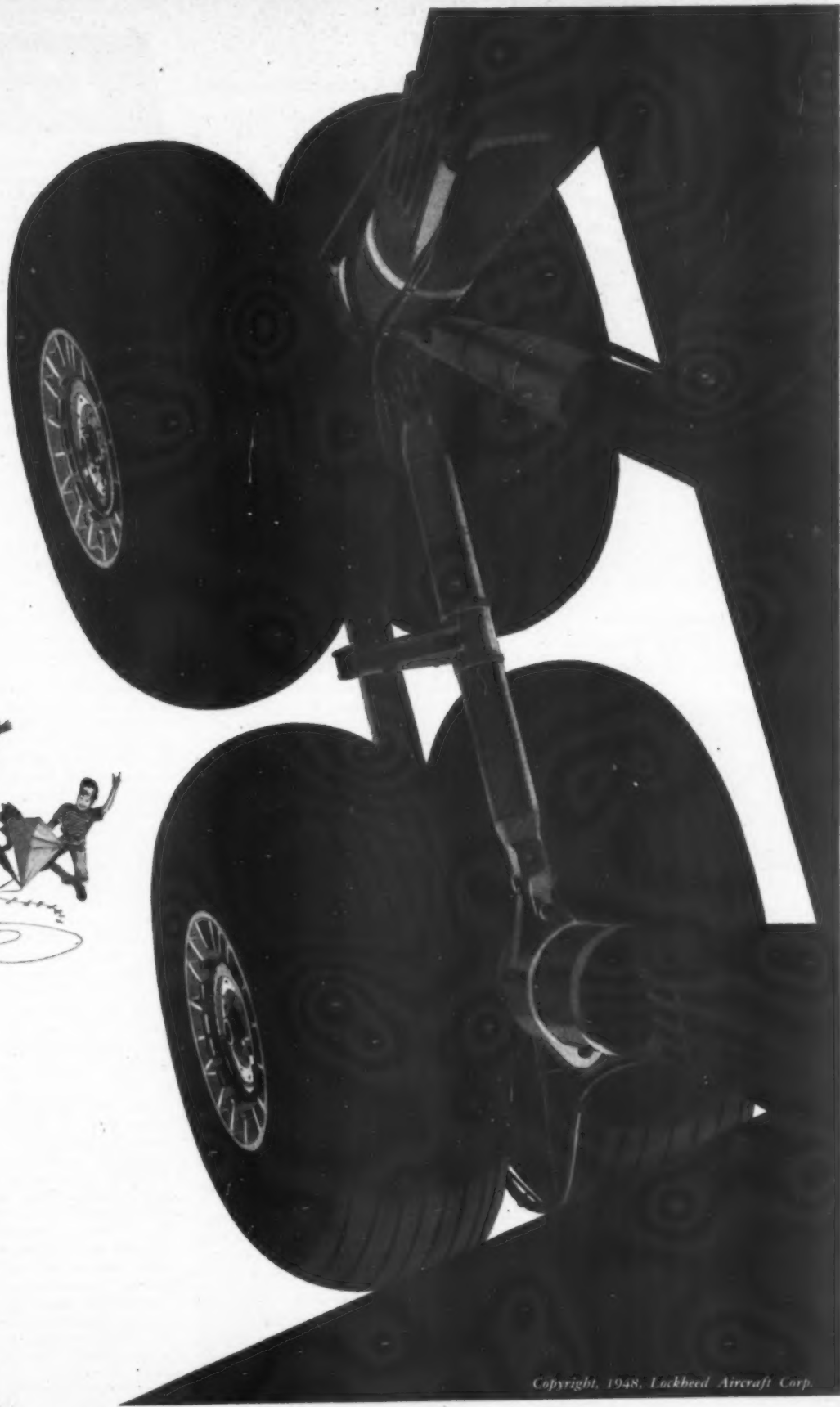
Lockheed Aircraft Corporation, builders of the U. S. Navy P2V Patrol Bomber, holder of the world's long-distance non-stop record (11,236 miles); the P-80 Shooting Star, the U. S. Air Force's standard jet fighter; and the Constellation, world's leading transport.



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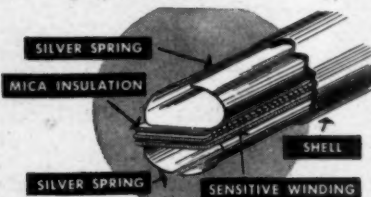
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AMERICAN AVIATION



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OPERATIONS-MAINTENANCE

METEOROLOGY

Wins ATA Research Award

Peter E. Kraght, supervisor of meteorology for American Airlines in New York, has been designated the winner



Kraght

of the annual award given by the Air Transport Association for airline employees performing the best original research having practical application toward improving weather analysis, forecasting and the dispatching of aircraft.

His prize winning paper, "The Theory and Practice of Witen—a Wind Time Analyzer", won the top award of \$250. Kraght is author of two books on meteorology and numerous articles. He joined American in 1936 as a meteorologist and became supervisor at New York in 1940.

Second and third awards went jointly to J. T. Hilworth and R. D. Roche, of Eastern Air Lines' Atlanta meteorology department. Elworth's paper, "A Dual Study of Airline Ceiling and Visibility Problems at Nashville and Birmingham," and Roche's on "Weather Forecasting in the Piedmont Provinces and Airline Weather Forecasting for Raleigh-Durham, N. C.," were closely related and regarded by the ATA awards committee as practically on a par. As such the committee decided to make second and third awards jointly, with each receiving \$125.

Roche was co-winner of first place a year ago, while Hilworth placed second. The awards were established by ATA in 1940.

EQUIPMENT MFG.

Lear, Inc., Grand Rapids, Mich., has announced appointment of Arthur G. Thrun as sales manager of its Aviation Radio Division with headquarters in Grand Rapids. Thrun has been active in the aviation industry 18 years as pilot and radio engineer. He was formerly with Radio Corporation of America in an aviation radio sales capacity.

Glenn L. Martin Co. Chemicals Division has announced initial shipments of the vinyl resin, Marvinol VR-10, from its new 6-million-dollar Painesville, O., plant, scheduled to become the third largest producer in the vinyl resins field. Annual output of plant will be 25 million pounds of Marvinol VR-10.

John T. Beatty, president of United Specialites Co., has been named chairman of the Mechanical Engineering Division of the Special Development Program at Illinois Institute of Technology.

SAFETY SLANTS

ANOTHER manufacturer—Union Stop Fire—has produced a water type cabin fire extinguisher for aircraft. It uses a simplified squeeze grip control. Only a single operation is required to pierce the "sparklet" CO cartridge and start the water flowing. The entire unit, with a 1½ quart anti-freeze charge, weighs less than seven pounds, so that stewardesses should be able to handle it with ease. This is the second such extinguisher produced in this country, although no American airline has adopted a water type unit for cabin use. The British have employed a water extinguisher and fire protection authorities hold that it would be more suitable than carbon tetrachloride or carbon dioxide for seat cushion, refuse or baggage fires.

Too few flight crews make a thorough check of their plane when they take it over. It is true that the cockpit checklist may be gone through perfunctorily, but the walk around inspection and the other checks prescribed by most flight manuals are seldom carried out.

Occasionally a conscientious pilot will be found who faithfully follows this ritual, but most depend on their maintenance crews to turn the plane over to them in ship-shape condition. If every captain would take the ten minutes or so that it requires to walk around and through his ship before each flight, he would be in the position of knowing for himself that no one had slipped up.

It is hard to put the blame for this entirely on the crews, since it is human nature to get by with as little effort as possible. Rather, chief pilots, and over them, management, stand indicted for failure to insist that these duties be honestly performed. It would take some effort to carry out a program of checking that these pre-flight inspections were performed, but they should be made mandatory.

The Aircraft Engineering for Safety Committee is doing a swell job of spreading throughout the industry information about accidents, equipment difficulties and near mishaps with the aim of preventing recurrences. Member organizations furnish reports of their experiences and these, edited to avoid possible embarrassing identification, but with all pertinent facts and recommended corrective or preventive measures are circulated. The idea follows a fundamental principle of safety work of all kinds: Profit by the experience of others—Don't let the same dog bite twice.

Daily Plane Utilization International

	Nov.	Dec.
American		
2 eng. pass.	10:48	12:07
4 eng. pass.	6:59	9:25
Cargo	6:33	8:17
Amer. O'Seas		
2 eng. pass.	1:13	1:21
4 eng. pass.	6:00	5:37
C & S		
4 eng. pass.	7:48	8:06
Colonial		
4 eng. pass.	4:22	3:38
Eastern		
4 eng. pass.	9:16	9:04
National		
4 eng. pass.	10:28	8:05
Northwest		
2 eng. pass.	4:42	4:49
4 eng. pass.	8:17	8:10
Panagra		
2 eng. pass.	4:26	4:45
4 eng. pass.	4:30	7:40
Cargo	3:15	1:31
Pan American		
Latin American		
2 eng. pass.	6:54	7:17
4 eng. pass.	9:13	9:03
Cargo	4:40	5:02
Atlantic		
2 eng. pass.	3:39	3:44
4 eng. pass.	6:54	6:17
Cargo	5:06	5:45
Pacific		
4 eng. pass.	9:11	10:07
Cargo	11:46	12:08
Alaska		
2 eng. pass. ....	....	4:19
4 eng. pass.	8:41	7:26
TWA		
4 eng. pass.	6:25	7:40
Cargo	3:34	4:14
United		
4 eng. pass.	8:02	10:05

Feederlines

Challenger		
(DC-3)	4:14	5:41
Empire		
(Boeing 247-D)	4:37	5:20
Florida		
(Beechcraft		
D-18-C)	4:47	4:42
Monarch		
(DC-3)	4:58	5:16
Pioneer		
(DC-3)	6:40	6:41
Southwest		
(DC-3)	4:54	4:55
Trans-Texas		
(DC-3)	7:31	7:03
West Coast		
(DC-3)	5:07	4:48

Correction: The Daily Plane Utilization table appearing in AMERICAN AVIATION, March 15, p. 32, was incorrectly designated as "International" instead of "Domestic."



VHF COMMUNICATION AND LF NAVIGATION SYSTEMS

meet every operational need



A.R.C. Type 12 System
with "The Magic of VHF"

2-WAY VHF
ROTATABLE LOOP OPERATION
LF RANGE RECEPTION

Aircraft Radio Corporation has engineered a series of Communication and Navigation Systems to cover operational requirements for the 3 or 4 place executive-type aircraft.

THE A.R.C. TYPE 11A meets basic needs by providing for VHF Transmission, LF Range Reception and Rotatable Loop Navigation.

THE A.R.C. TYPE 17 is a 2-way VHF equipment, including a tunable VHF Receiver and a 5-channel, crystal controlled VHF Transmitter.

THE A.R.C. TYPE 12 illustrated combines the advantages of the Type 11A and the Type 17, offering 2-way VHF, together with LF Range Reception and Rotatable Loop Navigation.

All units of these systems have been Type-Certificated by the CAA for use by scheduled air carriers. Standards of design and manufacture are the highest. For the finest in radio equipment, specify A.R.C.

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(Foreign except Canada)





Let's look at the case of airline X

WITH its fleet of 26 prewar twin-engine airliners, airline X* was losing money each month. To meet this problem, airline X replaced its 26 obsolete planes with 12 Martin 2-0-2's. What was the result? The figures below speak for themselves.

	USING MARTIN 2-0-2	USING STANDARD PREWAR PLANE
No. of Airplanes in Fleet	12	26
Average Trip Length—Miles	400	400
Cruising Speed (60% NRP at 10,000') MPH	253	191
Block Speed—MPH (10 MPH Headwind)	219	168
Airplane Utilization—Hrs./Yr.	3650	3650
Passenger Seats/Airplane	36	21
Available Seat Miles/Yr.	345,000,000	335,000,000
Seat Miles at 60% Load Factor	207,000,000	201,000,000
Direct Flying Cost/Airp. Hr.	\$98.22	\$58.08
Indirect Expense—125% Direct	\$122.78	\$72.60
Total Cost/Airp. Hr.	\$221.00	\$130.68
Operating Expenses/Yr./Fleet	\$9,680,000	\$12,400,000
(Note: Revenue figures do not include mail, express and freight.)		
Revenue/Yr. at 85% L. F. and 5.5 cents/Pass. Mi.	\$16,130,000	\$15,660,000
Gross Profit	\$6,450,000	\$3,260,000
Revenue/Yr. at 80% L. F. and 5.5 cents/Pass. Mi.	\$15,180,000	\$14,740,000
Gross Profit	\$5,500,000	\$2,340,000
Revenue/Yr. at 70% L. F. and 5.5 cents/Pass. Mi.	\$13,280,000	\$12,900,000
Gross Profit	\$3,600,000	\$500,000
Revenue/Yr. at 65% L. F. and 5.5 cents/Pass. Mi.	\$12,330,000	\$11,980,000
Gross Profit	\$2,650,000	(-) \$420,000
Revenue/Yr. at 60% L. F. and 5.5 cents/Pass. Mi.	\$11,390,000	\$11,060,000
Gross Profit	\$1,710,000	(-) \$1,340,000

*THOUGH above figures for hypothetical airline X are based on ATA formula, figures based on actual operating costs of the 2-0-2 are even lower. The Glenn L. Martin Company, Baltimore 3, Maryland.

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909

AOC Rejects 'Unjust' Fees

By KEITH SAUNDERS

Are the nation's airlines paying, through landings fees and space rentals, a fair and reasonable share of the cost of operating and maintaining the large terminal airports they use, or are the operators of the airports and the taxpayers who underwrite their costs bearing an unduly heavy financial burden?

For three days early this month delegates to the first annual meeting of the Airport Operators Council, representing the public bodies operating airports accounting for 1% or more of the scheduled airline traffic, discussed this controversial question in Boston's Copley-Plaza Hotel. Final result was at least a moral victory for the airlines.

Despite heavy pressure from "soak-the-airlines" advocates, the resolutions committee at the final business session adopted a resolution recommending only that the airport operators should make every effort to develop non-flight revenues to a maximum, so that charges against aeronautical users of the airports might be held to a minimum.

There were indications that a few of the operators might yet follow the thinking of the Massachusetts Department of Public Works, operators of Boston's \$53,000,000 Logan International Airport who were interested in imposing a special gallonage fee on all aviation fuel dispensed to the airlines using the field, but the majority seemed inclined to work with the airlines on a mutually fair basis.

The worry of the airline operators was an understandable one. Upon completion of improvements slated for the next few years, the 20-odd airports represented at the meeting will represent an investment of \$500,000,000 of municipal, state and federal funds. The costs of maintaining and operating these facilities is such that most of the operators are finding themselves hard-pressed to break even on operations without making any provision for debt payments on their bond issues.

Their need was for more revenue, and they were limited to two principal sources: revenues from airlines and fixed-base operators using the airports (landing fees, hangar and office rentals, etc.), and non-flight revenues (restaurants, parking lots, vending machines, etc.). To some of the operators the airlines appeared to be the best potential sources of additional revenues.

Gov. Robert F. Bradford of Massachusetts spoke the views of this group in the opening address of the meeting, in which he rejected "the comfortable assumption that government in business must be played for a sucker"; declared

that large airports "must not be operated for any special or private interest"; asserted that the operators "must not . . . embark upon a program which would amount to perpetual subsidy (of the airlines)"; and emphasized that "the paramount consideration (in fixing charges to airlines) must be that the airports ultimately shall become self-supporting."

Although admitting he did not want to see such things happen, Bradford asserted that the states and cities would survive "even if there were no . . . public-financed, non-military air terminals," but "on the other hand, if the (airport) facilities we are now providing were abandoned, the infant air transport industry could not survive."

ATA's View. Blunt corollary to this statement was made next day by Robert Ramspeck, executive vice president of the Air Transport Association, who reminded the governor that, while scheduled air carriers can not exist without airports, conversely, airports can not exist without scheduled carriers.

The ATA spokesman said the airlines recognized their responsibility to contribute their fair share to the costs of the operation and maintenance of an airport, and admitted that some agreements between airlines and airport operators should be reviewed in the light of changed conditions. But he was emphatic in asserting that:

Airport leases should be for long periods, and should be subject only to

negotiating between the provider (airport management) and the user or users (principally the scheduled airlines) without intervention "on the part of any outside group or organization, governmental or private."

Airport landing fees should be established on a sliding scale basis according to the number of schedules operated per month and should bear a close relationship to the facilities offered at each individual airport.

As to such special charges or levies as gallonage, storage or dispensing fees on aviation fuel sold on airports, Ramspeck made it clear that the air transport industry regarded these as "analogous to state aviation fuel taxes" and was "unalterably opposed" to them.

Ralph S. Damon, president of American Airlines, reminded the operators that "we (the airlines) are probably your most steady-paying customers" and that "your concerns and ours are only different sides of the same coin."

"It behooves us," he said, "to understand each other's problems and to consider matters of facilities requirements and charges on a co-operative, realistic basis. Neither of us can effectively resolve these problems through a unilateral approach. Moreover, yours is a public facility, and we are responsible for the performance of a public service. It is accordingly our duty to work out these matters on a sound and economical basis."

By adjournment time the earlier sentiment for soaking the airlines had largely subsided. Furthermore, the operators during the meeting had picked up from Louis E. Leverone, president of the Automatic Canteen Co. of Chicago, and Robert S. Curtiss, director



Airport Group's Officers— Officers elected by the Airport Operators Council at its first annual meeting in Boston Apr. 1-3 were: front row, left to right, Bernard M. Doolin, director San Francisco Municipal Airport, 1st v.p.; Col. J. Victor Dalling, chief of the Philadelphia Bureau of Aeronautics, president; James C. Buckley, director of airport development of the Port of New York Authority, 2d v.p. Standing, left to right, are: Claude F. King, deputy commissioner of airports for City of Cleveland; Harry C. Brockhoff, director of public utilities of St. Louis, directors; Leander Shelley, general counsel of the Port of N. Y. Authority, general counsel.

AIR views

Opening up before us — air carriers and aircraft manufacturers alike — is a great revenue potential that has been slow in developing.

I'm speaking, of course, of the future in air cargo, as contrasted with passenger revenue. Only since the war have the vast opportunities in this field been approached realistically. There is still a long way to go.

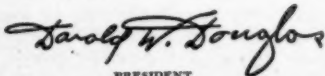
Even today, for example, 95% of the revenue of all U. S. air transportation companies comes from carrying passengers; only 5% from freight. Contrast this with rail transportation, which gets 18% of its total revenue from passengers and 82% from freight!

Naturally, the flying of passengers will always remain a vital and glamorous part of our aviation picture. But there is reason to believe that the flying of cargo offers far more dollars and cents return.

What seems called for now is more careful over-all planning toward the successful handling of air cargo, and a long-range program for selling this service to management.

Cargo compartments of passenger planes and converted passenger planes must be replaced with aircraft specifically designed to handle cargo. Standard methods of tying down and loading and unloading must be devised. And fair rates established on a competitive basis.

In meeting and solving these problems, we here at Douglas stand ready to aid the air carriers in every possible way.



PRESIDENT
DOUGLAS AIRCRAFT COMPANY, INC.
SANTA MONICA, CALIFORNIA

AIR TERMINALS

of the Department of Concessions and Revenues of the Port of New York Authority, a number of promising ideas for the development of additional non-flight revenues at their respective airports. The meeting ended on a happy note.

Officers elected to head the AOC included: Victor J. Dallin, chief of the Philadelphia Bureau of Aeronautics, president; B. M. Doolin, director of San Francisco Municipal Airport, 1st vice president; James C. Buckley, director of aeronautical development, Port of New York Authority, 2d vice president; Leander Shelley, general counsel of the Port of N. Y. Authority, general counsel; and Claude King, deputy airports commissioner of Cleveland, and Henry Brockhoff, director of public utilities of St. Louis, directors.

S. F. Pleased With Formula

The San Francisco Municipal Airport is highly pleased with the way its new and quite different system of postwar rates and charges is working out, according to B. M. (Mike) Doolin, manager and chief engineer of the airport department. The same satisfaction, however, is not expressed by all the airlines using the airport.

For the scheduled airlines, the Public Utilities Commission of San Francisco employs what it calls "disposable load" as the yardstick for landing fees.

It starts off with a basic operating fee of \$300 a month which each operator pays in addition to all other charges. Then it makes a monthly charge for schedules on the basis of \$6.25 for each 1,000 lbs. and fraction thereof of "disposable load" computed for each schedule.

The "disposal load" is calculated by deducting the empty weight of the aircraft with standard equipment from its standard gross landing weight at sea level. The weight differential is the "disposable load."

Using this method of computing landing charges, the monthly rate for a Douglas DC-3 schedule is \$50. For a DC-4, the formula makes a schedule cost \$125 and up per month, depending upon version flown. DC-6's and Constellations cost proportionately more because of their greater payloads and when the Boeing 377 Stratocruiser goes into service San Francisco will really hit the jackpot.

What the airlines dislike about the San Francisco rates primarily is the fact that the customary sliding scale in airport landing fees is completely lacking. The \$6.25 rate per 1,000 lbs. applies for every schedule and there is no reduction for frequency. The airlines generally prefer a landing fee structure which bases charges on the number of scheduled flights per month with a sliding scale reducing the fees as schedules increase.

The San Francisco formula was devised to differentiate between the various types of equipment. Mike Doolin

regards the "disposable load" as the best means of making charges equitable.

"Our rates have an actual relationship to use," said Doolin. "It isn't our fault, for example, if an airline uses a DC-4 on a schedule where a DC-3 should be used. Our formula is the best method of charging an airline on the basis of what it gets."

San Francisco's "disposable load" charges apply only to scheduled trunk airlines. Different formulas are used for feeder lines and non-scheduled operators. Feeders pay 2% of the total fares charged embarking passengers. For freight, mail and express they pay \$2.40 per ton per month on the initial 200 tons and 80c per ton per month for all subsequent outgoing cargo.

Non-scheduled carriers pay the same rate as the feeders for freight and express—\$2.40 per ton per month for the initial 200 tons and 80c per ton per month for all additional outgoing cargo. Non-scheduled passenger rates, however, are 5% of the total fares charged embarking passengers, but are limited to \$1.50 per passenger.

Promotes Coach Service

Art Beggs, president of AirporTransit, operator of the airport ground transportation service in Los Angeles, has launched a merchandising campaign in an effort to increase the proportion of passengers using coach service to and from the Los Angeles Airports and Lockheed Air Terminal. Surveys show only about 24% of the plane passengers in Los Angeles use the coach service.

Beggs has written letters to the airlines serving Los Angeles that is in their interest to cooperate with the coach company and help out on the program. He suggests that one way would be to call attention to the coach service in their display advertising.

The coach company has prepared a small, neat piece of printed material which outlines the services of the company from its downtown terminal in the Biltmore Hotel and Hollywood to the two airports and this is placed in the airline ticket offices so that it can be put in the ticket envelopes given to purchasers. AirporTransit recently was acquired by the Yellow Cab Co. and Beggs has arranged for large display cards to be posted in the company's 1,100 cabs in Los Angeles advertising his service.

To Beggs, the problem of the airport ground operators resolves itself into a common equation with the airlines and it requires the full cooperation of both to be solved. Costs for the coach operators have gone up approximately 30% or more in the last two years. That means a greater volume of traffic has to be attained or the service reduced to stay in business. Increases in coach fares can go only so far without driving the business to other forms of transportation. AirporTransit has recently boosted its fare to \$1.09 plus tax, making the total to the passenger \$1.25.

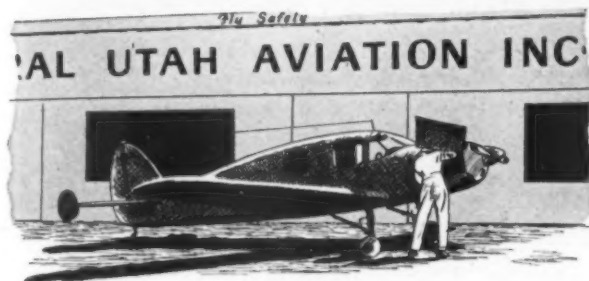
AMERICAN AVIATION

Standard of California's **PLANE FAX**



A page of service tips for private flyers and fixed-base operators

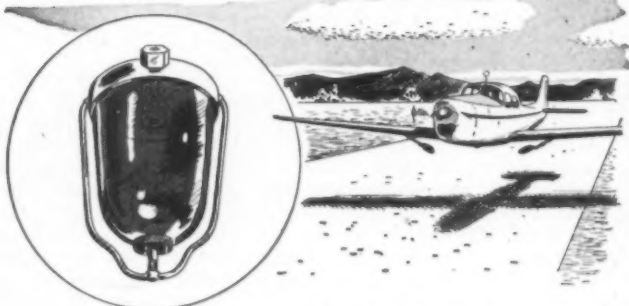
Central Utah Aviation Cuts Maintenance Costs



Edgar A. Poe and Myron W. Jense, of Central Utah Aviation, a flying school and transport service at Provo Municipal Airport, operate eleven planes. Overhaul periods ran from 150 to 200 hours. Mr. Jense writes: "Not being satisfied with this situation we changed to RPM Aviation Oil... overhaul periods now range from 560 to 600 hours. This, as you can see, has cut our maintenance overhead considerably."

Check your fuel system before take-off

It's a good policy to remove dirt and water from your fuel system during preflight inspection, because they can prove just as embarrassing as an empty tank. To avoid the possibility of trouble in the air, check your filter bowl and strainers and drain tank sumps before taking off. Another good policy is to use Chevron Aviation Gasoline because it's perfectly balanced for starting and cruising.



Instrument care on the ground pays off in the air



Proper care of aviation instruments is a precaution that pays off at crucial moments. A special instrument lubricant is required for full protection. The anti-rusting ingredient in RPM Aviation Instrument Oil protects gyro and other instrument bearings from rust due to condensation often found with ordinary oils.

Use a Chevron National Credit Card

If you reside in the West, write Standard of California, 225 Bush Street, Room 1618, San Francisco 20, California, or ask the Standard Airport Dealer at your field for an application blank. Chevron National Credit Cards are good at airports throughout the United States, Canada and Alaska.

"Fly Safe... File a Flight Plan"



Standard Oil Company of California

Setback for Forwarders

Final action in the long-pending Freight Forwarder Case might result in some freight forwarders being given the right to engage directly in air transportation, but hopes the forwarders had entertained that they might be legalized earlier through a general exemption order were ended last fortnight.

Such an exemption would have been provided in proposed Economic Regulation 292.6, adoption of which had been urged strongly by the forwarders and the all-freight airlines, and the Board had seemed inclined to approve the exemption. But it suddenly announced abandonment of the proposed regulation on the grounds that basic issues involved in the proposed 292.6 also were involved in the Freight Forwarder Case, and that the Board was prepared to expedite action in this case upon issuance of the examiners' report, then in course of preparation and soon to be issued.

Acting CAB Chairman Josh Lee filed a dissent to the order in which he declared that the Board's action was "tantamount to using its own procedural delays as an excuse for not granting relief requested." Lee suggested that a test period of legalized forwarder operations might eventually be needed to provide a factual basis on which to decide the forwarder issue, and said 292.6 offered the best way of piling up this experience record. Any abuses and malpractices which might be attributable to forwarders would come to light during such a test period, he added.

In addition to abandoning 292.6, the Board on the same day rejected Railway Express Agency's application to become a legalized forwarder by exemption in advance of decision on its applications in the Freight Forwarder Case. This had the effect of confining REA's activities in air transportation to carriers with whom it has Air Express contracts.

The forwarders and the non-certificated air freight lines with whom they had hoped to be able to effect a mutually profitable arrangement for the development of air freight volume were greatly disheartened.

American Looks to Cargo

Leading all certificated carriers and ranking second only to Slick Airways in the carriage of air freight last year, American Airlines has set its sights on first place in 1948 and is working systematically to achievement of that end.

Spearhead of the drive is a panel or team of the airline's top cargo-sales officials, headed by Walter Sternberg, general traffic and sales manager. In an effort to develop air freight, both present and potential, this team for the past several weeks has been making whirlwind tours of key cities on American's system for the purpose of making a sur-



Candy Special—Throughout the month of March until Easter, the Loft Candy Corp. of New York used Eastern Air Lines for air shipping cartons of sweets to 10 terminal cities for parcel post distribution throughout the country. The new service covered all out-of-town parcel post orders beyond a 300-mile radius.

vey of manufacturing, financial and merchandising firms to determine their needs and show them how air freight service can be of help to them.

"We feel," said Sternberg, "that we can show that many industries can put themselves in better competitive sales positions by using air cargo more extensively, and that others can cut their distribution costs by taking advantage of the expedited delivery inherent in air cargo."

The AA sales official expressed belief that results of this nation-wide survey will enable American to assess the air cargo potential in specific terms of what will move at what rates, and between what cities.

"American believes this is the first approach of its kind and magnitude that has been undertaken in the air freight field and has high hopes that it will produce a sound basis for rates incorporating the two important elements of rate-making—cost and demand," Sternberg added.

One phase of the team's story has to do with closer control of inventories, a subject in which merchants are becoming keenly interested. Here's how they make their point:

If a merchant sells a hundred units of a given item a day and uses surface transportation requiring eight days for delivery, his minimum inventory is 800 units. The size of his store or warehouse facilities, the number of people necessary to receive stock and inventory and maintain premises, the interest on

capital tied up in inventory, his rent, his taxes, his lights and heat, are all governed by that minimum 800 units. By using air, with second-day delivery, he can cut his minimum inventory to a two-day supply of 200 units and take a lower mark-up because of the resulting decreases in the above named costs. Also, the team points out, a lower inventory correspondingly reduces his risk on perishable, high-fashion merchandise when styles change.

Nor does the team rely on hypothetical cases alone, for it is equipped with several brief cases filled with case histories showing actual benefits business firms have received from the use of air freight. Other phases of the tours include luncheon discussions with business groups, press conferences, and radio interviews.

Members of the cargo-sales team, besides Sternberg, include: Joseph Boyland, representing domestic cargo sales; Robert Warner, international sales; Frank Jones, passenger and cargo; James E. McDonald, New England cargo sales representative; Del Bogart, eastern region cargo sales; Stuart Riordan, central region; George Ferreira, western region, and Jose Berrera of AA de Mexico.

By the end of March, the team had visited the Los Angeles area, Chicago, and Dallas-Fort Worth, and had visits mapped to other key cities on American's system. The airline counted on lasting benefits for shippers as well as itself. Said Sternberg:

"The benefits of these surveys extend

AMERICAN AVIATION

*"Yes, Sir, I understand,
but it's London you want . . .
not Olympia"*



"The Games at Olympia in Greece—where you competed, sir—were held there for the last time more than fifteen hundred and fifty years ago.

"But we'll gladly fly you to London for the fourteenth Olympiad in the *new* world series. Between now and the end of July, BOAC will be carrying thousands of spectators—swiftly and surely—from the farthest corners of the earth.

"Yes, sir, it's a small world by Speedbird, you'll find. As five rings are joined in the Olympic symbol, our Speedbird Routes now link five Continents.

"At the London Olympics, enthusiasts from the cities of ancient Greece will rub shoulders with those who've come from Athens, Minnesota, and Ithaca, New York—from Corinth, West Virginia, and Sparta, Tennessee.

"But, wherever they'll be starting from, they should plan the trip right away. It's not too soon to make Speedbird reservations for July and August. Our flights are heavily booked already by visitors going for the games."

SPEEDBIRD SERVICE . . . Over the Atlantic . . . and Across the World



Twenty-eight years' flying experience—with ten years' experience over the North Atlantic.
Seventy-two thousand miles of Speedbird Routes.
Over 100 'million miler' BOAC Speedbird Captains

DAYS OF FLIGHT AND FARES* TO LONDON

From	Via	Days of Week	One Way	Round Trip
NEW YORK	GLASGOW	MON., THURS., SAT.	\$350.00	\$630.00
NEW YORK	SHANNON	SUN., TUES., FRI.	\$350.00	\$630.00
MONTREAL	GLASGOW	MON., WED., FRI.	\$336.00	\$604.80

*Fares to Scotland or Ireland are slightly less

YOUR LOCAL TRAVEL AGENT IS OUR LOCAL OFFICE

Information and bookings also at most airline offices, or at BOAC, 420 Madison Avenue, New York 17, N. Y.

BRITISH OVERSEAS AIRWAYS CORPORATION

Routes to Australia, New Zealand and South Africa in association with Qantas Empire Airways Limited, Tasman Empire Airways Limited and South African Airways respectively.

far beyond the immediate production of freight tonnage. As we exchange our experience in air freight with the problems of the manufacturer or merchant, we are constantly devising new techniques which will benefit air freight and industry."

Indicative of the benefits it expected for itself, American was making plans to have 20 DC-4 airfreighters in operation by the end of this year, with a total payload of 160 to 180 tons.

California Cargo Program

An air cargo promotion and development program which promises to play a significant part in hastening progress in this phase of air transportation has been launched in California.

Under active sponsorship of the California Aeronautics Commission, all groups interested in the development of air commerce in the state have joined forces in creating an Air Cargo Project Committee for a cooperative program to develop large-scale movement of cargo by air.

The committee, formed on a permanent basis at a meeting in San Francisco, consists of approximately 40 representatives of certificated airlines, the non-certificated air carriers, agriculture, universities, aircraft manufacturers, shippers, packagers, growers and other groups.

Officers elected by the new organization are J. Prescott Blount, Slick Airways, chairman; John P. Houghton, San Francisco district manager of Air Cargo, Inc., vice chairman; Lyman S. Lantz, chief of the division of aeronautical development of the California Aeronautics Commission, secretary.

Named as members of a steering committee for the group were L. R. Hackney, sales engineer of Lockheed Aircraft Corp.; Ernest C. Miehle, San Francisco district sales manager, American Airlines; George Cussen, assistant to the president, The Flying Tiger Line; Dr. L. L. Claypool, associate professor of Pomology, University of California, and George H. Casey, Jr., Pacific Fruit Exchange. A representative of the packaging industry will be named later.

Study of Perishables. Immediately with the formation of the Air Cargo Project Committee plans were instituted to establish a non-profit shipping institute for the purpose of making a wide-scale practical study of the shipment of perishables on the dollars-and-cents level.

Taking one product at a time, the institute will actually make purchases from growers, ship them to eastern markets and follow through on their distribution and consumer sales. For example, one item like loganberries will be taken first and explored thoroughly. When all the facts are gathered and correlated on this first item, then a second fruit or vegetable will be chosen and so on down the line.

The Air Cargo Project Committee is starting out on perishables, because ton-

nage from west to east is the weak link in the air cargo chain and establishment of the non-profit institute exemplifies the committee's determination not to be simply a group that writes a lot of reports and accomplishes nothing.

When he was chief of the airport planning staff of the Reconstruction and Reemployment Commission for the state, Warren E. Carey, now director of aeronautics, made a cargo study and projected that by 1950 California's perishable fruit and vegetable tonnage by air should be 70,701 tons annually. That would require 45 schedules per day for cargo planes of DC-4 load capacity in the growing season.

From time to time, various perishable shipments have been made from California to eastern markets, but they have been irregular and for the most part have consisted entirely of seasonal premium items. Their contribution to a consistent transportation pattern, therefore, has been slight. What the institute will do is seek facts to determine how perishables may be transported by air on regular schedules without wide seasonal variations.

Impact on Industry. As a California group, the Committee's primary objective concerns itself with exploitation of the state as a superior air freight market. But in attaining this end, it should have a far-reaching impact on the industry nationally.

California's economy is not self-sufficient and speedier air transportation is essential. The bulk of the finished consumer goods imported into California originate in the east and midwest and a wide variety of products are available for shipment east to west. But return tonnage is needed to balance costs and revenues, and California is primarily an exporter only of perishable agricultural products and high value, low bulk industrial specialties.

A manufacturing and design committee also is to be named by the Committee in the overall program being outlined. It will actively engage in encouraging the development of new aircraft designed for more economical carrying of cargo by air. A packaging and container committee will be appointed to study methods to improve air shipping procedures for all types of goods.

A highlight of the organization meeting was the spirit of cooperation displayed by all branches of the industry. This was especially illustrated by the fact that it was a representative of a certificated carrier who proposed that Prescott Blount of Slick Airways be chairman and the nomination of John Houghton of Air Cargo, Inc. as vice chairman came from a non-certificated delegate.

Seven Objectives. The steering committee plans to meet regularly once a month to expedite the projects determined upon by the main committee in pursuing its objectives. These objectives as adopted at the organization

meeting in San Francisco are as follows:

1. To foster and encourage research in more efficient handling and shipping of cargo by air, including development of new products which can feasibly be shipped by air.

2. To maintain continued cooperation, through this committee, of all branches of the aviation industry and allied industries concerned with air cargo, including agriculture, packaging, refrigeration, merchandising, etc.

3. To coordinate and evaluate all existing information on the subject of air cargo to avoid duplication of previous effort.

4. To obtain cooperation of all concerned for experiments in regularly scheduled shipments of agricultural products to eastern markets.

5. To encourage shipment of only top quality produce by air.

6. To encourage a study of what products can best be shipped by air, rates which will attract these products, and other features of the market picture.

7. To encourage development of new aircraft designed for more economical carrying of cargo.

UAL Promotes Perishables

United Air Lines is aiming at volume transportation of airborne perishables to balance off its return loads from California to the east. In its fast-increasing air cargo activities, United faces the common directional problem; 70% of its cargo volume is westbound, only 30% is eastbound.

United pioneered in experimental shipments of airborne perishables, and, working in cooperation with the late Ralph Myers, the Salinas, Calif. grower; the A & P Stores, Wayne University and others, made a number of tests covering the air shipping and marketing of fresh fruits and vegetables even before the end of the war. The equipment shortage, however, caused the program to be sidetracked.

United has several large-scale shipments from the Imperial Valley, the San Joaquin Valley and other California growing areas scheduled to start as soon as the marketing season gets under way. One deal may run into 20 or more plane loads.

The airline has four DC-4's, eight DC-3's, and five C-47's operating in its cargo service. The C-47's, however, are used for reserve and for extra sections and are not in regular schedule.

UAL Rate Chart: United Air Lines is installing a new "rate and route chart" in its traffic and sales, air freight and cargo offices to speed information to shippers. Charts carry names of 350 cities in vertical columns with space beside each for pertinent data.

'Father Goose': Air Express Division of Railway Express Agency is distributing a 16-page booklet entitled "Father Goose," in which nursery rhymes are rewritten to promote advantages of air express shipping.

AMERICAN AVIATION



X-RAYS GET THE INSIDE STORY

► This Wright technician is reading an X-Ray negative of a vital engine part. The penetrating X-Ray has revealed a small flaw *inside* the casting — where the sharpest human eye would never see it.

► But like your family doctor, the Wright engineer is more interested in preventing trouble than in curing it. The findings of X-Ray are not limited to the rejection of parts. Information about the behavior and qualities of metals is passed along to the foundry-

man, the forgers, the countless others who make the parts.

► Better parts are the logical — and permanent — result. Technicians in the Wright Aeronautical laboratories X-Ray thousands of parts each month and 40 exposures are made on some of the more intricate pieces.

► Another example of the care—the instinct for perfection — used in development of Wright aircraft turbine and reciprocating engines.



POWER FOR AIR PROGRESS

WRIGHT

Aeronautical Corporation • Wood-Ridge, New Jersey

A DIVISION OF
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FIRST IN FLIGHT

SALES PROMOTION

EGOHAASPSROTAL

Sales personnel from all stations on Chicago and Southern Air Lines' system who attended the annual spring sales meeting of the company in Memphis came away talking about a summer sales contest offering them an opportunity to pick up some extra cash. But the thing they were talking about most (although no one could pronounce it) was the catchword of the contest—EGOHAASPSROTAL.

The word had been tantalizing C & S personnel since it began appearing in early February on bulletin boards, inter-office correspondence and in *Skysteps*, the company's house organ. But it was not until T. M. Miller, general traffic and sales manager, outlined possibilities of the company's six all-expense summer air cruises to Cuba and briefed the salesmen on the summer sales contest that the meaning of the odd word was divulged.

Neither the cruises nor the contest would be a success, Miller told the group, without plenty of EGOHAASPSROTAL, which he said means "Everyone Get Off His Afterpart and Start Putting Some Revenue On This Air Line."

Another high light of the meeting was the introduction of two characters who for the seven months (Apr. 1 through Oct. 31) the sales contest is in progress will tour the C & S system. One of these, known as "Sadsack," will visit the station holding bottom position in the contest each month; the other, known as "Fireball," will visit the leading station each month.

J. J. Shad, director of station sales, characterized "Sadsack" as a salesman who has "plenty of nothing"—no business, is short on long hauls, has "O" round trips, can't claim any air cruise sales, is excellent at public deflation activities, and can boast no window displays at all.

"Fireball," on the other hand, is well charged with sales promotion plans, has reaped plenty of long haul business, helps create travel agency sales and Havana cruises, knows the value of publicity and public relations, gets plenty of window displays, and sells nothing but round-trips.

This summer's sales contest differs from the one held last year in that quotas will be assigned only on the number of passengers, both long haul and total. Quotas and results of quotas will be figured from records available in the company's general offices. The C. & S. stations have been divided into two groups (high passenger potential stations and low passenger potential stations), and the station in each group earning the greatest number of points during the contest period will win for each eligible employee in the station a cash award of \$25.



Sadsack vs. Fireball—T. M. Miller, general traffic and sales manager of Chicago and Southern, points to "Fireball," who represents the sales qualities needed by the C & S station which will win the company's summer contest. Disregarded is "Sadsack," who can't sell anything. Each month "Fireball" will go to the station which is leading the contest, while "Sadsack" will drop in on the station holding the lowest number of points. The contest runs seven months.

Employees eligible for these awards include: traffic managers, passenger service managers, traffic representatives, traffic secretaries, senior reservations agents, reservations agents, senior ticket agents, ticket agents, station managers, chief agents, station agents, and senior station agents, commissary personnel under jurisdiction of station managers, employees performing line service duties on ramp, and porters. Also, employees in the load control office in Memphis will receive an allowance of \$5.00 for each station making or exceeding their monthly total passenger boarded quota, up to a maximum of \$25 per employee in load control.

The contest is being run under a committee consisting of W. L. Scott, T. S. Miles and J. J. Shad.

C & S employees now have only to EGOHAASPSROTAL.

Free Color Movie: 'Flight to the Sun,' motion picture portrayal in color of the American Southwest, has been released by Trans-World Airline for free showings before group audiences throughout

the U. S. The film is a 16 mm., four-reel production that runs 40 minutes. It is obtainable free of charge, except for mailing costs both ways, through the Institute of Visual Training, 40 E. 49th St., New York 17.

AGENCIES

More Duties for Agents

South African Airways, which last December followed the IATA recommendation for boosting agency commissions to 7½% on passenger sales on flights not originating and terminating within the old African and Middle East Conference Areas, has now imposed additional duties on agents in conjunction with the increased rate of commission.

A passenger booked for travel on the company's international trunk route must be advised by the booking agent in regard to time, date and airport of departure, the point from and time at which surface transport will depart, and any other information the passenger may require. Agents are ex-

AMERICAN AVIATION

pected henceforth to complete the passenger briefing forms and immigration departure forms which airline personnel formerly had to handle. Agents also are required to advise passengers as to rule whereby passengers booked to destination outside the Union of South Africa will not be permitted to emplane if found lacking necessary passport and health certificates.

Passing on of these details to booking agents will free airline personnel of much time-consuming red tape. Other air carriers will watch South African Airways' pioneering move with keen interest.

NEW SERVICES

Domestic

Capital Airlines inaugurated service into New Orleans and Mobile on April 8, with initial service of two flights daily in each direction.

Florida Airways on April 5 inaugurated its first direct scheduled service between Tallahassee and Jacksonville, via Lake City and Gainesville, with two round-trip flights a day provided initially. Schedules between Orlando and Jacksonville, via Sanford, DeLand and St. Augustine, were adjusted on the same date to improve connections with other carriers at the two terminal points.

International

Air France inaugurated a new weekly service April 14 out of New York and Boston to Paris, Rome, Jerusalem and Cairo. Two new flights a week, one direct from N. Y. and one via Boston, to be added on May 19 will increase AF's trans-Atlantic services to nine weekly, with three of them serving Boston.

Pan American Airways has begun serving Munich with Sunday and Wednesday flights out of Brussels, via Frankfurt. Connections are made at both Brussels and Frankfurt with the daily service from London and with the thrice-weekly PAA flights out of New York.

Pan Am on April 1 inaugurated a "commuter" air service between San Juan, P. R., and St. Thomas, Virgin Islands, with six daily flights and three other round-trip schedules weekly. It also has revised its schedules to provide an all-daylight local service between San Juan and Port of Spain, Trinidad, on the thrice-weekly flights, which also service St. Thomas and Antigua and St. Lucia in the British West Indies.

Trans-Canada Air Lines will begin serving Bermuda May 1 with week end flights originating in both Toronto and Montreal.

American Overseas Airlines will increase its trans-Atlantic schedules from 15 to 20 round-trip flights weekly, effective May 1. Daily flights will be made New York-Europe from May to September.

April 15, 1948



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WASHINGTON and the SOUTH

National's new service improves travel to the nation's capital

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No 'Maybe' Space Under TWA's Teleflite

On April 25 Trans World Airline's successful Teleflite reservations system, now just a year old, will be further improved by elimination of the "maybe" status, under which air travelers requesting space on nearly-full flights have had to await confirmation via teletype from Teleflite's Kansas City headquarters.

Though the "maybe" condition affected only 10% of all TWA passengers, the airline's reservations staff under Russell G. Pettite, system manager of reservations, has long had the goal of eliminating this waiting period, thus making immediate confirmation possible for all prospective passengers.

By the end of the month, a reservation agent at any TWA domestic station will be able to answer any space inquiry with a simple yes or no. If the answer is no for a particular flight, he will suggest alternate flights upon which space is still open.

This removal of the word "maybe" from the vocabulary of TWA reservations and ticket agents is referred to within the company as eliminating the "green" condition, because a green tab opposite a flight on the flight status board always has meant that that particular trip was nearly sold out and confirmation of a request would have to be secured from Kansas City. Now the status boards will carry only white tabs for "open" and red tabs for "sold out."

Overbooking Prevented. "When we first set up the Teleflite system," Pettite explained, "we established a cushion of several seats for each flight and adopted a green condition to be used when bookings reached the cushion. We were



Russell G. Pettite
Directs TWA's Reservations

afraid that without centralized control of these marginal seats, several might be sold in various cities simultaneously, thus overbooking the flight.

"Experience, however, has shown this to be rarely the case. After a year of operation we have found that we can control the sales on individual flights closely enough to prevent overbooking even without our green or request condition," Pettite asserted.

"We have discovered that our high-speed teletype circuits, used exclusively for reservations service, are fast enough to keep up with the pace of sales in the great majority of instances. The no-

show average also is utilized to help us avoid overbookings," said Pettite.

Thus a reservations agent at any TWA station can now confirm immediately as many as two seats for any flight within the next seven days as long as the white condition exists. As sales approach the plane's capacity, Teleflite's central control office maintains a close watch on reservations for the trip. As soon as the plane is sold out a message to that effect is transmitted instantly to every TWA station via the broadcast teletype circuit, and a red tab replaces the white one on all flight status boards.

This simplification of Teleflite, Pettite says, not only will result in improved service for the passenger, but also will add materially to all-around efficiency of the system.

"Now we will be able to lighten the loads on our teletype circuits, simplify operation of our central reservations service office in Kansas City and eliminate the numerous call-backs by our reservations personnel in the field which were occasioned by the green condition procedure," the reservations chief explained.

Unique Communications. Company management gives some of the credit for the success of their Teleflite system during its first year to the unique communications network which was established for the service. Where most airlines having central reservations systems employ the same teletype circuit used for the carrier's operational and administrative communications, TWA has two complete teletype circuits totalling more than 14,000 miles devoted exclusively to Teleflite reservations service. One of these circuits provides two-way com-



Message Hub— Hundreds of reservations messages from all over TWA's domestic system flow in and out of the teletype room in the airline's central reservations service office at Kansas City. More than 14,000 miles of teletype circuits fan out from this nerve center of TWA's Teleflite reservations control system to stations from coast to coast.



Teletype To Conveyor— From the receiving teletypes, messages on seats sold are taken to a conveyor belt which transfers them to clerks handling flights concerned. Girls at right are putting messages in correct slot on belt. Teletype operator at left is seated at broadcast machine which sends flight status reports to all TWA districts.

munications between the Kansas City control office and any TWA district, while the second is the broadcast circuit over which information is transmitted from the headquarters office to all stations simultaneously.

In a year of operations, the Teleflite communications system handled more than six million messages totalling 92 million words, for a daily average of nearly 300,000 words, equivalent to a good-sized novel. The system used 3,322,450 feet—or 610 miles—of teletype paper in transmitting this constant flow of messages.

While several airlines have adopted reservations systems resembling TWA's, Pettie points out that Teleflite has several features which are unusual.

One unique adjunct to the service was created late last year with the addition of two en route coordinators to the Kansas City office staff. The task assigned these men is that of following the movement of every TWA flight across the country in order to protect connecting reservations for passengers aboard.

For instance, Mr. Brown is booked from Los Angeles to Chicago via a Constellation flight, connecting there with a DC-3 flight for Dayton. The en route coordinator working eastbound flights traces the progress of the Constellation flight by means of flight movement reports furnished him by TWA's flight planning office in Kansas City. If he sees the "Connie" is going to miss the connecting flight for Dayton, he cancels Mr. Brown's space on that flight and books him on the first flight available out of Chicago after the Constellation's estimated arrival time.

Thus when the Los Angeles flight arrives in Chicago, Mr. Brown and all other passengers holding connecting reservations are still protected, even though the flight is late.



Teleflite Is Their Business—Gathered around a raised desk overlooking the entire central reservations office is Teleflite's staff. From left around desk are: Ruth Worley, senior agent; Robert H. McCormick, superintendent of reservations service office; William J. Fray, lead reservations agent; Harry J. Lookabill, staff assistant, communications; Henry H. Martin, lead reservations agent, and seated at desk, R. D. Jones, staff assistant, reservations.

Connecting Service. The same service is provided TWA passengers holding connecting space on other airlines. In this case it is the control center agent working the particular flight who protects the passenger with a connection to make. Say Mrs. Nolan of Columbus is riding a TWA flight to Chicago where she will board a United Air Lines flight to Omaha. The Teleflite agent handling that flight in the Kansas City office watches its movement and if a delay occurs he advises the Chicago reservations office by teletype to cancel Mrs. Nolan's United space and book her on a later flight.

Such a service is possible because TWA keeps all passenger names under the Teleflite system. This is not true of other central reservations systems. Where most airlines know only the number of passengers holding connecting reservations, TWA's agents know all their names. Such knowledge eliminates

confusion at the transferring station and results in increased passenger service.

At first limited to 30 days in advance, Teleflite now provides for the booking of plane space six months or more ahead. First status reports are posted in the various stations only seven days in advance but reservations further in the future than one week are recorded in the central control office. Teletype messages noting sale of space more than a week ahead are held at the booking station until 2 a.m. for transmission when teletype circuits are relatively free. Otherwise reservations messages are transmitted immediately.

Goals Achieved. The initial goals of Teleflite supervisors a year ago were to provide immediate confirmation of space for 90% of all passengers and to give the remaining 10% an answer in a maximum of 10 minutes. Both of these goals were achieved, though the latter required several months. Spot



Busy Street—Twenty-four hours a day, seven days a week, reservations messages ride back and forth on this conveyor system in TWA's Kansas City reservations hub. Messages from the teletypes, beyond windows in rear, move down the long center slots to the proper desks where they are recorded.



It's In the Book—TWA agents seated at desks spaced along the conveyor belt record all seat sales in flight log books. When a flight is sold out, all TWA stations concerned are notified by teletype. Note flight numbers just above desks on side of conveyor.

TRAFFIC & SALES

checks earlier this year showed reporting times on green condition requests averaging 9.7, 7.3 and 8.9 minutes for different periods.

A total of 188 people are employed in the central reservations control office at TWA's Kansas City's headquarters. They include reservations agents, teletype operators, supervisors and the top Teleflight staff. Service is provided 24 hours daily.

Besides facilitating greatly improved reservations service to the traveling public, TWA's Teleflight system has saved the airline money during its short existence. A comparison of reservations service cost in September, 1946, before Teleflight was initiated, and in August, 1947, when it was in full operation showed that TWA handled 25% more passengers in the latter month with expenses totalling some 5% less than for the 1946 period.

TWA management also is certain that Teleflight has aided substantially in the campaign to increase load factors. A study made of DC-3 service at all but five of TWA's domestic stations in December, 1946, indicated the old space allocation method of selling space was losing TWA 2,000 seats, representing a potential \$90,000 in revenue, every ten days. Petite and his associates know Teleflight is immeasurably more efficient.

Basic engineering of the Teleflight system has proved surprisingly sound. Petite said, and this factor has provided flexibility of service and steadily increasing performance. TWA believes the coming improvement in the system can be accomplished in stride.

WAL's Flying 'Salesmen'

Western Air Lines has instituted an in-flight reservations program and in the first 28 days of its operation it paid off with 68 reservations with a net dollar value of \$2,090.45 to the company.

Key to the program is a card which is distributed to passengers aboard Western's planes. This card advises passengers: "We are anxious to serve your transportation needs. If you desire a round-trip or continuing reservation not already requested by you, you are invited to fill in the following information and hand this card to your stewardess."

Western thoughtfully made the card just a little too big for a passenger to slip it into his pocket and forget to give it to the stewardess. Its ample size also makes it easy for the passenger to fill in his name, the reservation desired, his address and phone number and so on.

The stewardess is instructed to check the information on the card, assist the passenger in determining the most convenient flight and deliver the card to a station passenger agent at the first stop. The station agent in turn is instructed to expedite the reservation request immediately. In the 68 reservations, confirmation beat the passenger to his destination in every case.

That stewardesses can do a good job

Air, Rail & Pullman Traffic Comparisons*

Year	Domestic Air ** (000 omitted)	Pullman (000 omitted)	Ratio Air To Pullman	Class I Railroads *** (000 omitted)	Ratio Air To Rail
1935	279,375	7,146,269	3.9%	14,365,156	1.9%
1940	1,045,100	8,213,878	12.7%	19,773,103	5.3%
1941	1,384,739	10,070,406	13.7%	25,272,075	5.5%
1942	1,398,042	19,071,589	7.3%	46,762,868	2.9%
1943	1,606,119	25,891,465	6.2%	82,582,428	1.9%
1944	2,229,571	28,267,090	7.9%	90,231,145	2.5%
1945	3,500,102	27,275,788	12.8%	86,327,390	4.1%
1946	5,930,126	20,972,365	28.3%	58,840,434	10.1%
1947					
Jan.	380,757	1,378,284	27.6%	3,607,079	10.6%
Feb.	372,276	1,160,646	32.1%	3,000,303	12.4%
Mar.	493,864	1,179,784	41.9%	2,992,507	16.5%
Apr.	526,188	1,063,867	49.5%	2,990,856	17.6%
May	563,761	1,060,811	53.1%	3,240,614	17.4%
June	546,685	1,215,291	45.0%	3,575,719	15.3%
July	543,541	1,139,367	47.7%	3,906,286	13.9%
Aug.	611,838	1,166,186	52.5%	4,009,151	15.3%
Sept.	609,756	1,103,602	55.3%	3,327,157	18.3%
Oct.	578,889	1,028,282	56.3%	2,942,378	19.7%
Nov.	435,083	999,566	43.5%	2,875,110	15.1%
Dec.	439,622	1,020,107	43.1%	3,460,635	12.7%
'47 Total	6,102,260	13,515,793	45.1%	39,925,415	15.3%

* Revenue passenger miles.

** Includes all certificated dom. airlines, incl. feeders.

*** Exclusive of commutation traffic.

of selling when properly schooled was indicated by the fact that in the first four weeks of the program 27 stewardesses sold one or more reservations. Total reservations for the period were \$2,614.15 with Western cashing in on the bulk of the revenue for its own line, \$2,090.45. The average reservation on Western's own line was \$34.27.

TRAFFIC

Air Gains On Rails

The nation's Class I railroads still operated more than six times as many revenue passenger miles last year as did the certificated domestic airlines, and the Pullmans more than twice as many, but the airlines were moving up fast.

The record was one in which airline traffic personnel could take pride, and in which railroad traffic departments could find some grounds for apprehension. Official figures filed with the Civil Aeronautics Board and the Interstate Commerce Commission told the story:

The domestic airlines, including the feeders, flew 6,102,260,000 revenue passenger miles in 1947, the Pullmans reported 13,515,793,000 revenue passenger miles for the same period, and the Class I railroads, exclusive of commuter traffic, operated 39,925,415 revenue passenger miles.

The air traffic represented 45.1% of Pullman volume, and 15.3% of Class I railroad passenger miles, and there was every indication that airline traffic volume would easily exceed 50% of Pullman volume and possibly 20% of rail volume this year, for the air traffic has been increasing steadily, while rail and Pullman traffic, which swelled to abnormal proportions during the war years, have been dropping swiftly back to pre-war levels.

Pullman revenue passenger miles, for example, rocketed from 8,213,878,000 in 1940 to 28,267,090,000 in 1944, then fell off to 21 billions in 1946 and plunged further to 13.5 billions last year. Should they get back to the 1940 level in another two years, there is an excellent chance they will be surpassed by the domestic airline passenger mile volume. The Class I railroad traffic volume, which included the Pullman passengers, of course, rose swiftly from 1940 figure of 19.8 billion revenue passenger miles to a 1944 high of 90.2 billions, and then started a post-war decline which apparently hasn't stopped yet. By 1946 it had dropped to 58,840,434,000 revenue passenger miles, and fell off sharply again in 1947 to 39.9 billions.

Travel on the certificated domestic airlines, on the other hand, has risen from 1,045,100,000 revenue passenger miles in 1940 to last year's figure of 6.1 billions, with some gain each year.

Perhaps the airlines still were a long way from a true mass travel volume, as reckoned in terms of rail traffic, but the 1947 record furnished strong indication that they were on their way.

INTERLINE AGREEMENTS

Northwest Airlines has effected an agreement with Scandinavian Airlines System covering interline reservations, exchange of space, joint advertising and promotional activities and possibly an exchange of stewardesses on certain international flights. Effect approaches one-carrier operation, with New York as a transfer point.

Mid-Continent Airlines has expanded its "Instant Reservations" system to provide space confirmation to all points served by Braniff Airways, Eastern Air Lines and American Airlines.

U. S. Domestic Airline Traffic for January

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES	REVENUE TRAFFIC	AVAILABLE TON-MILES	% AVAILABLE TON-MILES USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All American	144,990	74,605,000	128,797,000	58.2%	2,234	1,896	4,130	4,130	18,740	22.0%	118,607	142,986	83.0%	
American	36,690	14,101,000	27,071,000	52.1%	456,851	435,788	1,198,329	9,503,046	17,988,404	52.8%	3,642,163	3,807,491	92.1%	
Boeing	39,269	15,839,000	35,061,000	45.2%	73,804	76,352	71,723	1,574,462	3,223,967	48.9%	869,735	880,586	94.9%	
Capital-PCA	59,269	15,839,000	35,061,000	45.2%	64,051	177,615	350,122	2,106,580	4,465,070	47.2%	1,138,637	1,280,824	87.2%	
Caribbean	6,638	807,000	834,000	48.0%	643	492	33,638	33,638	77,340	43.5%	33,636	33,781	100.0%	
C & S	17,002	7,028,000	13,301,000	52.0%	31,182	57,344	41,139	808,364	1,699,380	47.4%	503,842	565,902	87.3%	
Colonial	6,834	1,956,000	3,724,000	52.0%	6,052	3,892	1,133	208,341	340,979	61.1%	176,960	196,843	85.0%	
Continental	10,685	3,917,000	8,349,000	46.9%	11,554	5,654	12,705	405,775	923,959	43.9%	405,190	415,648	96.0%	
Delta	32,791	14,686,000	31,073,000	47.9%	77,366	76,528	114,590	1,685,107	4,295,774	39.2%	1,075,736	1,261,345	85.2%	
Eastern	145,423	86,227,000	150,372,000	57.3%	308,405	342,063	4,222,465	38,981,371	93,822,409	52.4%	24,069,069	25,847,647	90.9%	
Hawaii	26,528	3,687,000	5,421,000	68.0%	2,862	10,272	55,276	378,168	625,141	60.9%	249,599	201,487	97.9%	
Inland	5,218	1,973,000	3,695,000	53.4%	8,130	3,953	1,942	202,832	381,982	53.1%	192,963	197,780	97.6%	
NCA	19,448	5,927,000	10,516,000	56.4%	19,441	13,871	14,576	61,599	1,094,400	36.7%	536,593	547,080	97.7%	
National	20,041	10,356,000	20,049,000	51.7%	32,016	69,419	127,635	1,291,421	3,086,346	41.8%	612,974	694,120	87.1%	
Northeast	13,386	2,512,000	6,895,000	36.4%	4,607	9,534	17,705	271,424	606,657	44.7%	241,394	314,825	73.6%	
Northwest	35,277	19,278,000	35,847,000	53.0%	172,408	161,228	96,318	2,281,703	4,528,854	50.4%	1,132,988	1,203,320	92.9%	
TWA	78,265	64,185,000	110,461,000	58.1%	848,717	531,931	711,001	8,286,805	13,677,111	60.6%	4,256,376	4,491,164	92.6%	
United	106,222	63,686,000	104,768,000	60.0%	588,598	605,563	1,165,486	8,466,103	15,456,176	54.0%	4,221,686	4,525,729	91.1%	
Western	20,113	7,924,000	16,290,000	48.6%	34,164	21,701	41,814	857,903	1,866,050	46.0%	486,452	517,334	93.5%	
TOTALS	786,380	396,374,000	712,124,000	55.9%	2,742,965	2,584,604	4,022,465	38,981,371	93,822,409	52.4%	24,069,069	25,847,647	90.9%	
Final Figures for Western Air Lines														
November: Freight ton-miles 257,430 Total ton-miles revenue traffic 8,943,767; \$ available ton-miles used 47.4%														
December: Freight ton-miles 446,822 Total ton-miles revenue traffic 10,557,879; \$ available ton-miles used 51.9%														
* Figures not yet available.														

U. S. Feederline Traffic for February

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER-MILES	AVAILABLE SEAT-MILES	PASSENGER LOAD FACTOR	MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES	REV. TRAFFIC TON-MILES	AVAILABLE TON-MILES	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All American	961	231,000	2,177,000	10.6%	2,441	1,536	3,977	23,708	16.8%	115,218	140,736	81.9%		
Challenger	723	153,000	690,000	22.1%	1,290	364	14,362	55,399	25.9%	69,001	80,391	85.6%		
Empire	760	110,000	541,000	20.2%	365	234	9,929	59,205	16.0%	67,663	72,212	93.7%		
Monarch	1,139	261,000	1,946,000	13.4%	1,634	647	4,239	32,728	137,944	23.7%	107,761	141,507	74.7%	
Piedmont**	100	31,000	137,000	22.6%	112	28	3,048	13,023	23.4%	6,528	12,300	53.1%		
Pioneer	3,523	901,000	3,851,000	23.4%	2,304	1,084	1,147	83,792	405,439	20.7%	159,693	216,282	73.4%	
Southwest	4,660	881,000	3,056,000	28.0%	3,098	2,039	5,830	99,443	330,571	30.1%	157,289	160,898	97.7%	
Trans-Texas	624	165,000	2,409,000	6.8%	1,095	388	42	16,191	157,597	10.7%	96,077	115,652	83.0%	
West Coast	2,756	365,000	1,576,000	23.2%	902	384	42	34,686	166,131	20.9%	86,854	94,801	91.6%	
Win. Cent.***	23	4,000	135,000	3.0%	122	71	546	4,145	13.2%	4,225	14,952	28.3%		
TOTALS	15,289	3,102,000	16,538,000	18.8%	14,993	7,404	13,292	326,011	1,528,839	21.3%	973,929	1,166,553	83.3%	
Helicopter Mail Service														
Los Angeles	1,299	6,075	16,509	16.934	94.9%									
* Starting with this month the reports of All American Aviation, which heretofore have been included among the U.S. domestic trunklines, will be listed with the U.S. feeder airlines.														
** Began operations February 20, 1948.														
*** Began operations February 24, 1948.														

U. S. Feederline Revenues and Expenses for January

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
Challenger Empire	\$ 74,376 39,729	\$ 14,336 8,665	\$ 58,970 30,600	\$ 565	\$ 463	\$ 29 48	\$	\$ 89,861 74,165	\$ 43,612 39,404	\$ 46,249 34,761	\$ -15,484 -34,436
Florida Monarch	37,493 81,299	4,588 19,189	32,661 59,305	98 382	..... 1,214	34 91	..... .....	57,331 114,332	27,479 58,667	29,852 55,465	-19,838 -33,032
Pioneer Southwest	199,736 101,131	64,408 43,964	89,437 55,158	517 648	292 1,015	383 250	1,069	176,508 172,439	87,885 81,710	88,623 89,729	-16,772 -70,307
Trans-Texas West Coast	72,025 52,499	8,317 17,422	63,603 34,817	..... 308	..... .....	80 62	..... .....	79,274 83,194	37,329 35,269	41,945 47,925	-7,249 -30,695
TOTALS	618,288	180,869	424,551	2,518	2,984	977	1,069	846,104	411,555	434,549	-227,813
Los Angeles	15,195	.....	15,195	.....	Helicopter Mail Service .....	.....	.....	20,538	12,579	7,959	-5,343

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.



Step 1—Baggage of departing Clipper passengers is weighed by PAA traffic clerk W. L. Thompson in one of six wells in ticket counter.



Step 2—An endless conveyor belt carries outgoing baggage outside to central loading ramp. Designed as an integral part of the ticketing and dispatching area, the conveyor belt is located about six feet directly behind ticket counter and extends entire length of counter.

Baggage Handling Made Easy

While no airline ever has succeeded in eliminating all causes of passenger complaints, Pan American Airways thinks it has gone a long way toward eliminating one source of gripes—slowness in loading and unloading baggage and mishandling of same—at its new \$150,000 Miami passenger terminal.

Main feature of the mechanized baggage handling system used there is an endless conveyor belt located immediately behind the ticket counter and built in as an integral part of the counter area.

When a passenger steps up to get his ticket, he deposits his baggage on the scales, where it is quickly weighed and tagged. The traffic clerk then has only to pick it up, step back three paces and place it on the conveyor belt, which carries it outside to a central baggage loading ramp to be loaded on a dolly and trundled out to a waiting plane.

At the plane's side, another new mechanism—an engine-driven conveyor belt loader—completes the job. This mobile device, used both for loading and unloading baggage, is driven up to the

forward cargo hatch and quickly adjusted for height.

A three-man team working with the conveyor belt machine can load a plane in a minimum of time: one man picks the baggage off the dolly and places it on the conveyor belt; another takes it off the top and hands it to a third man, who stows it in the cargo hold.

This trio can handle a complete load in less than half the time formerly required by four men handling each piece of baggage individually.

Furthermore, since most of "handling" is now done by belts, rather than by porters and baggage clerks, chances for rough treatment in loading and unloading processes are reduced considerably.



Step 3—Outside at central loading ramp, PAA baggage clerk John V. Beattie lifts bags off end of conveyor and stacks them on dolly for removal to waiting plane. The loading ramp is alongside the aircraft parking area.



Step 4—Final step in streamlined baggage handling system is this mechanical conveyor-belt loader. PAA cargo supervisor William O. Bailey shifts baggage from dolly to conveyor which carries it inside plane cargo hatch.

Advertisers In This Issue

Advertisers	Page
Air Express Div., Railway Express Agency, Inc.	19
Aircraft Radio Corporation	33
AirResearch Mfg. Co., Div. of The Garrett Co.	9
American Airlines, Inc.	5, 49
Bendix Aviation Corp., Eclipse-Pioneer Div.	29
Bendix Aviation Corp., Scintilla Magneto Div.	Second Cover
British Overseas Airways Corp.	39
Central Radio & Television Schools, Inc.	32
Douglas Aircraft Co., Inc.	34
Eclipse-Pioneer Div., Bendix Aviation Corp.	29
Thomas A. Edison, Inc., Instrument Div.	32
Fairchild Aircraft Div. of Fairchild Engine & Airplane Corp.	3
Flightex Fabrics, Inc.	49
General Ticket Co.	43
The B. F. Goodrich Co., Aeronautical Div.	12
Gulf Oil Corporation	7
Lockheed Aircraft Corp.	30, 31
The Glenn L. Martin Co.	34
National Airlines, Inc.	43
Pacific Airline Corp.	Third Cover
Pan American World Airways System	50
Phillips Petroleum Co., The Aviation Dept.	Fourth Cover
Railway Express Agency, Inc., Air Express Div.	19
Scintilla Magneto Div., Bendix Aviation Corp.	Second Cover
Sikorsky Aircraft Div. of United Aircraft Corp.	10
Sperry Gyroscope Co., Div. of The Sperry Corp.	25
Standard Oil Co. of California (Chevron Aviation Gasoline)	37
United Aircraft Corp., Sikorsky Aircraft Div.	10
United Air Lines, Inc.	22
Wilcox Electric Co.	26
Wright Aeronautical Corp.	41

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- Douglas DC-4 Airplane Parts and Accessories and Ground Equipment
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These inventories are available for inspection at our warehouses at Astoria, L. I., New York, Tulsa, Oklahoma and Fort Worth, Texas, and offered F.O.B. these points for domestic shipment at very attractive prices.

Prompt attention will be given to all requests for quotations directed to the attention of the Director of Surplus Sales at the above address. Write, Telegraph or Telephone (Ravenswood 8-1040).

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1317 F Street N. W., Washington 4, D. C.

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HELP WANTED

TECHNICAL WRITER WANTED—Leading trade publisher has opening for experienced editor-reporter to cover developments in airline engineering, operations and maintenance. Excellent opportunity for competent writer who is thoroughly familiar with current industry problems. Reply Box 613, AMERICAN AVIATION, 1317 F. Street, N. W., Washington 4, D. C.

POSITIONS WANTED

Aviation Director, Project Expediter, Airport Manager. 20 years in aviation, 11 years administrative experience; can organize; familiar with promotional work, airport planning and programming, layout, zoning, Federal procedures, State and municipal problems. Box No. 612, AMERICAN AVIATION, 1317 F St., N. W., Washington 4, D. C.

New CAB Airline Directory

New issue of CAB's Directory of Scheduled Common Carrier Airlines of the World, listing companies in operation as of April 1, will be ready for distribution about July 1, according to Sydney B. Smith, chief, foreign air transport division, Economic Bureau, CAB. Meanwhile, a supplement, listing 14 additional operators performing scheduled common carrier service as of Jan. 1, 1948, is available through CAB's Publications Office, Washington 25, D. C.

This supplement does not attempt to revise information contained in the existing directory. Companies listed are: Aero Geral, Ltda., Santos, Brazil; Air Malta, Ltd., 60 South Street, Valetta, Malta; Alaska Island Airlines, Inc., Petersburg, Alaska; Asociacion Interamericana de Aviacion (AIDA), Avenida Jimenez No. 11-40, Bogota, Colombia;

Ceylon Airways, Colombo, Ceylon; Compagnie Belge de Transports Aeriens (COBETA), 62 Avenue Louise, Brussels, Belgium; Compagnie Generale Transsaharienne, 15 Rue Michelet, Algiers, Algeria; Hong Kong Airways, Ltd., Hong Kong; Siamese Airways Company, Ltd., Airways House, Sripaya, Bangkok, Siam; Sociedad Colombiana de Transportes Aereos, Ltda. (SCOLTA), Avenida Jimenez No. 11-28, Bogota, Colombia (cargo only); Societe Africaine de Transports Tropicaux, 26 Bis Rue Sadi Carnot, Algiers, Algeria; Societe Francaise de Transports Aeriens du Pacifique Sud (TRAPAS), Noumea, New Caledonia; Townsville & Country Airways, Sturt & Denham Streets, Townsville, Australia; Transportes Aereos del Pacifico, S. A. (TAPSA), Guadalajara, Jalisco, Mexico; Trans-Texas Airways, Municipal Airport, Houston 17, Texas; and West African Airways Corporation (WAAC), Airways House, Lagos, Nigeria.

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WINGS OF YESTERDAY

25 Years Ago

Because of its adaptability as an airport for both landplanes and seaplanes, and because of its central location, Governor's Island was being considered as the logical air terminal for New York City.

The Aeromarine Plane & Motor Co. of Keyport, N. J. completed a flying boat hull constructed entirely of metal for the passenger service of Aeromarine Airways.

Announcement was made that the Dayton Wright Co. would discontinue all aircraft work approximately July 1, 1923.

10 Years Ago

(In AMERICAN AVIATION)

Denis Mulligan was to assume the directorship of the Bureau of Air Commerce on Apr. 16, 1938, succeeding Fred D. Flagg, Jr.

Congress enacted legislation authoriz-

ing, for the first time, experimental air mail feeder lines, autogiro shuttle service between outlying airports and central city areas, and five air mail star routes.

LETTERS

Forgotten Citizen

To the Editor:

I am writing to add a fervent "Amen!" to your 'Forgotten Citizen' editorial, Feb. 15 issue.

A case in point is the arrival of your own publication in this, the last week of March. Our only mail service for first and second class mail is a monthly or sometimes bi-monthly arrival of an Army F8 boat (freight ship). We are unable to obtain newspapers, magazines, and trade journals by air mail due to the prohibitive cost of mailing.

The 80-odd American and Australian citizens on this American airbase on the civil international air route from Honolulu to Sydney receive no current news other than the occasional newspapers left by flight crews on their refueling stops. The same situation exists throughout the Pacific. I have experienced this particular difficulty in the Marshalls, the Mariannas, Japan, Wake, Palmyra, Midway, the Hawaiian Islands during the past five years. It is almost heartbreaking during months on isolated posts to have almost daily air service and be unable to receive the publications that go so far toward informing the average citizen about domestic, national and international happenings.

In some instances the cost of air mailing magazines and newspapers exceeds the

original cost of the issue or subscription. It would be a decided advantage to place first and second class mail aboard all American flag carriers leaving the continental U. S.

Thank you for your attention, I hope your editorial will have some bearing on steps toward this end.

T. MATTHEW MOORE
OFACS, Civil Aeronautics Admn.
Canton Island, Phoenix Group
South Pacific

Doubter

To the Editor:

Your statement in the April 1 issue that, "Government salaries as a whole have tended to keep pace with rising costs" caused quite a laugh of sardonic amazement among the government employees in my office. Most of us received more income in 1946 than in 1947, as we were cut back to the 40 hour week. We were under the impression that prices, rents, etc. had all risen during 1947, but we may be wrong. We would like to know on what the above statement is based!

JOSEPH KERMIS,
Meteorologist,
St. Louis, Missouri

BOOKS

AIR TRAVEL GUIDE TO LATIN AMERICA.
By Ivan Bullo. Available from Exprinter Travel Books, 500 Fifth Ave., New York 18. \$5.00. (\$3.00 for travel agents.)

Here is a very useful book, compact and well done. It has 22 maps, is well indexed, and convenient for the air traveler. It covers all of South America, Mexico, West Indies, and Central America, and is based almost entirely on air travel.

The book contains current information on airlines, hotels, restaurants, what to see, where to go, what to wear, and suggest itineraries. More than 1,000 towns in 36 countries are mentioned. Not only is the book a good silent salesman for air travel to Latin America, but it will make tourist trips much more pleasant for the practical information it contains.

Booklet

Detailed report on aircraft use during 1946, the first such study since 1942, has been published by the Civil Aeronautics Administration. Sixty-page publication contains history of private flying and detailed data on all types of aircraft usage for the year. Report is available free of charge from Office of Aviation Information, CAA, Washington 25, D. C.

OBITUARY

John Lovell

The Tennessee Bureau of Aeronautics recently passed a resolution in tribute to the late John Lovell for his outstanding contribution to development of aviation in Tennessee. Lovell pioneered and promoted the airport at Chattanooga, which was named Lovell Field in his honor. He was appointed a member of the Tennessee Bureau of Aeronautics in 1938, and was still serving with that body at time of his death.

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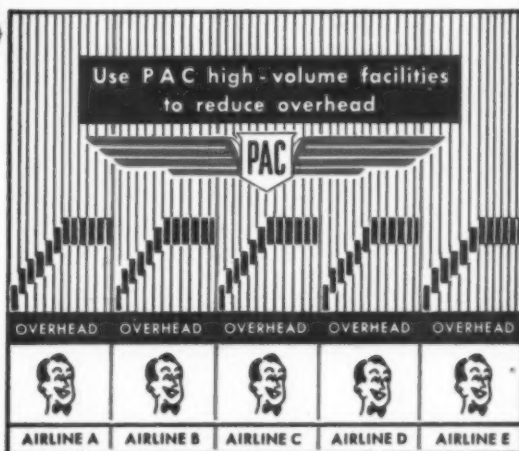
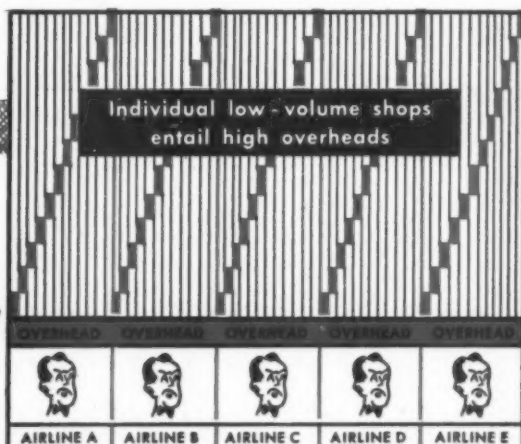
Isn't it wiser business strategy to avoid capital expenditure and excessive maintenance overhead by using the high-volume facilities of Pacific Airmotive, whose large shops are supported by work for more than 60 airlines?

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In effect, you are sharing PAC's facilities with more than 60 other airlines. The large total volume from all our clients enables us to provide maintenance and contract overhaul to each at rock-bottom prices for quality work.



If you are concerned with paring unnecessary overhead, why not get in touch with our service department at any one of our major service bases listed below? We have factual information we believe you will find interesting.

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SUPPLIES... PAC distributes more than 300 aviation lines through nine bases in the U. S. and Alaska. This includes engine, accessory, prop, and instrument parts and assemblies.

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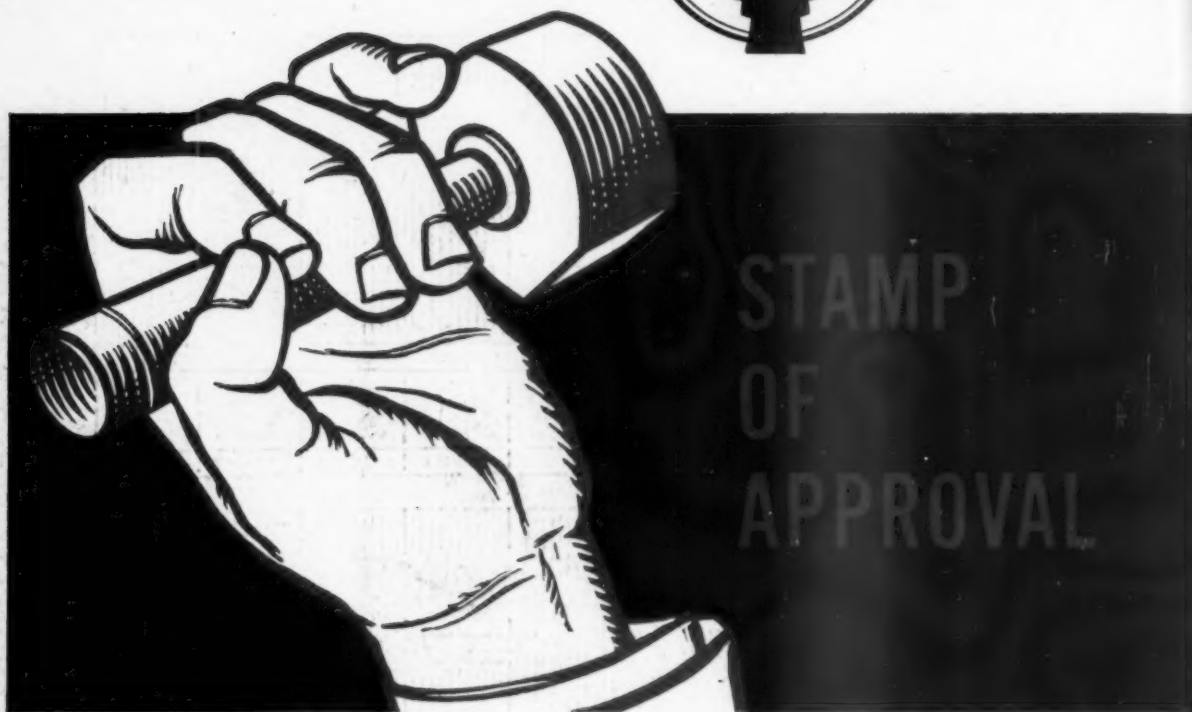
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